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In the

Supreme Court of the United States.

OCTOBER TERM, 1930

No. 12, ORIGINAL.

THE STATE OF CONNECTICUT
COMPLAINANT
v.
THE COMMONWEALTH OF MASSACHUSETTS,
DEFENDANT

IN EQUITY

STATEMENT IN REPLY TO DEFENDANT'S MOTION TO ADVANCE

BENJAMIN W. ALLING,
Attorney General of the State of Connecticut.
ERNEST W. AVERILL,
Deputy Attorney General of the State of Connecticut.
BENEDICT M. HOLDEN,
Special Counsel.

THE CASE, LOCKWOOD & BRAINARD CO.
HARTFORD, CONN.

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The Court having directed counsel to file statement in connection with the "Motion For Order Setting Case Down For Argument And To Advance For Argument," and the affidavit, "Statement In Support Of Defendant's Motion To Advance," the attached is

Respectfully submitted,

THE STATE OF CONNECTICUT

By BENJAMIN W. ALLING,
Its Attorney-General.

ERNEST L. AVERILL,
Deputy Attorney-General.
BENEDICT M. HOLDEN,
Special Counsel.

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Notice of the order setting case down for argument and to advance for argument, to be made October 6, 1930, was duly served upon and received by counsel for the complainant.

A conference between the Attorneys was held in Boston, Massachusetts, on Friday, October 3, 1930, at which conference it was agreed that counsel on both sides would exert themselves to expedite the preparation for printing and filing of a condensed statement of evidence, which has not yet been completed, and it was generally understood that the Court would not set the cause for hearing on any day prior to the re-convening of the Court after the "Thanksgiving Recess," and possibly not before the January term 1931.

Counsel from the Commonwealth of Massachusetts stated that they would ask for an early date, and counsel for the State of Connecticut stated that they would not make any objections to the Court setting the case for argument at some date subsequent to the "Thanksgiving Recess."

The next day, counsel for the State of Connecticut received printer's proof for an affidavit of David B. Keniston in support of the defendant's motion to advance. Nothing was said of this affidavit during the conference on the day previous. The affidavit on page 4 sets forth:

> "The project which is the subject of contention in the above entitled case involving the transfer of *flood waters* from the watershed of the Ware River. . . . "

Further on in the affidavit it is set forth:

> " . . . . . the City of Boston will be faced with a grave and severe emergency, if *waters* from the watershed of the Ware River cannot be transferred into the Wachusett Reservoir by the early spring of 1931."

Counsel for Connecticut claims that the evidence shows that Massachusetts has proceeded with its construction and is not being seriously delayed by the pending litigation.

The growth in population and in water consumption in the City of Boston has been normal, in fact the amount of water consumed has not been very materially increased in recent years. The problem of an additional supply had been the subject of a study for a great many years, and as affecting the affidavit of Mr. Keniston, we submit the following excerpt from an exhibit in the case, which is a report of a Joint Board relative to the Water Supply Needs and Resources of the Commonwealth of Massachusetts, filed with the Great and General Court of the Commonwealth of Massachusetts, designated as House Document No. 1550, dated January, 1922, which report sets forth:

> "Since the Wachusett Reservoir first filled in 1908 there has been an abundant supply of pure

water for all the inhabitants of the district. The reservoir has filled and overflowed in nine of the fourteen years. *During this period in several years the amount of water wasted, because all the reservoirs were overflowing, has nearly equalled the amount delivered into the aqueducts for use; and in two years the amount wasted has exceeded the amount used.* The largest reservoir alone holds a supply approximately sufficient to care for the needs of the entire district for one and one-half years, even if no rain fell during that period, eliminating evaporation from this calculation. The total storage capacity is so great that the district easily passed through four successive dry years, 1908-11, the period of lowest water yield since the Sudbury records were started in 1875, and in the last of the four years the Wachusett Reservoir was drawn down only 17 feet, and promptly overflowed the following spring." (Italics ours.)

The Complainant respectfully asks that an order be made and entered directing counsel to file an abstract of the evidence by November 15, 1930, and further directing the counsel to file briefs in court and exchange briefs with counsel by December 1, 1930. Reply briefs, if any, be filed not later than December 15, 1930, and that the cause be set for argument as soon after January 1, 1930, as the Court can conveniently hear the parties.

STATE OF CONNECTICUT,
By BENJAMIN W. ALLING,
Its Attorney-General.

ERNEST L. AVERILL,
Deputy Attorney-General.
BENEDICT M. HOLDEN,
Special Counsel.

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Attorney General of Massachusetts.
BENTLEY W. WARREN,
Special Assistant Attorney General.
GERALD J. CALLAHAN.
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Of Counsel:
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SHORT STATEMENT OF THE CASE.

THE COURSE OF PROCEDURE IN THE CASE.

This case was brought by the State of Connecticut against the Commonwealth of Massachusetts, under the original jurisdiction of this Court, to enjoin the use of waters of two streams, secondary tributaries of the Connecticut River, as a domestic water supply for the Metropolitan District about Boston, Massachusetts. On April

22, 1929, this Court (279 U.S. 821) denied Connecticut's motion to join the Secretary of War as a party defendant, and on December 2, 1929, referred the case to Hon. Charles W. Bunn as Special Master (280 U.S. 523) under a rule directing him "to make findings of fact and conclusions of law, and to submit the same to this Court with all convenient speed, together with his recommendations for a decree." On January 20, 1930, this Court (280 U.S. 532) from the bench denied Connecticut's motions to dismiss and to strike out the answer filed by Massachusetts.

The Special Master's Report.

The Special Master duly heard the testimony offered by the parties and on May 19, 1930, filed his report, which on every issue was favorable to the contentions of Massachusetts. He recommended that the bill of complaint filed by Connecticut be dismissed [Report of Special Master (hereinafter referred to as Rep. Sp. M.), 54]. This Court ordered the report to be filed (May 26, 1930). Massachusetts has disclaimed all intention to file any exceptions to the Special Master's Report. Connecticut has filed seventy-five exceptions to that report. The case now stands for argument upon these exceptions filed by Connecticut.

The Joint Summary of the Evidence.

The Joint Summary on file with this Court contains the following agreement: "This Joint Abstract of portions of the record, submitted by counsel for both parties, is designed to summarize within a reasonably small compass the evidence introduced upon issues on which The Special Master has made findings, to which the complainant has taken exception. Both parties desire to reserve the right, for the purpose of employing this summary to refer specifically in briefs and in argument to original exhibits and to the original transcript of the evidence, even though such

exhibits or such portions of the evidence are omitted from this summary by inadvertence or for the purpose of condensing the record" (Joint Sum. p. 1).

STATEMENT OF FACTS.

General Facts.

The Special Master found certain general facts (Rep. Sp. M. 2-6). [In considering this phase of the case the Court may find useful the large insert map at the back of the Special Master's Report and referred to by him on page 5 of his Report.]

The Massachusetts Project and Boston's Need of More Water.

[References are given not only to the Special Master's Report (Rep. Sp. M.) but frequently also to the Joint Summary of the Evidence (Joint Sum.) and to the original transcript of the evidence (Transcript) and exhibits.]

The Metropolitan Area surrounding the City of Boston is faced with "a serious water shortage in the near future and there is a real necessity for their making provision for a large quantity of additional water . . ." (Rep. Sp. M. 2). This Metropolitan Area consists of 20 cities and towns now members of the Metropolitan Water District, and of 15 other cities and towns, of each of which some part is within 10 miles of the State House in Boston (Transcript, p. 180), and all of which 15 cities and towns, though not now members of the Metropolitan Water District, are eligible to become members, and will probably do so in the near future. These 35 towns and cities have a total population of about 1,900,000 (Joint Sum. p. 158; Transcript, p. 133). Other cities and towns in Northeastern Massachusetts (Rep. Sp. M., insert opposite p. 3. These towns are situated in the geographical areas marked

on that insert "C," "E," and "F") must be considered in connection with the Metropolitan District not only because at some future time they will depend on the Metropolitan District water supply sources, but also because these populations in Northeastern Massachusetts must divide up, on principles of fair equality and of right, the water supply sources in that region, if waters from the Ware River and the Swift River be denied to Boston.

With reference to Southeastern Massachusetts the Special Master found that "the southeastern part of Massachusetts, including Cape Cod, seems to have sufficient supplies of water for itself and was not brought into the case" (Rep. Sp. M. 30). X. H. Goodnough, an expert witness for Massachusetts, stated that there was no surplus water in Southeastern Massachusetts available for the Metropolitan District (Joint Sum. p. 217; Transcript, p. 1586). Taking the needs of the population of Northeastern Massachusetts as a whole, the total population of the area "is now 2,860,000, estimated likely to reach a total in forty years [1970] of 4,572,000." The "whole region has a total present water supply of 343,000,000 gallons per day and a total consumption of 244,000,000 gallons per day, leaving a surplus of 99,000,000 gallons per day" (Rep. Sp. M. 3). By 1970 some of the present supplies, due to population growth, will have become impossible to use, and will probably have decreased from 343,000,000 gallons a day to 289,000,000 gallons a day, and estimated consumption requirements will probably have increased from 244,000,000 gallons a day to 467,000,000 gallons a day, leaving a 1970 deficit of 178,000,000 gallons a day (Joint Sum. p. 158). The present theoretical surplus of 99,000,000 gallons a day is distributed over a number of independent communities in small sources with no connections making their surplus mutually available. (See Rep. Sp. M. 2-3, 30-31, especially bottom of p. 31, where detailed figures of available water sources for Northeastern Massa-

chusetts, both in 1929 and in 1970, will be found.) The Special Master concludes, "There is no serious dispute about the need of this region to provide presently for additional water" (Rep. Sp. M. 3, Exhibit D-13; Joint Sum. pp. 158, 160).

The Massachusetts Legislation.

By the enactment of Mass. St. 1926, c. 375 (Reprint of Answer, pp. 36-51), and Mass. St. 1927, c. 321 (Reprint of Answer, pp. 51-80), the General Court of Massachusetts adopted a definite plan for obtaining an additional supply of water for the Metropolitan District. This plan involved the diversion into the Wachusett Reservoir (which is the principal present supply of Boston) of (*a*) flood waters of the Ware River as defined in section 4 of the 1926 Act, and (*b*) certain waters of the Swift River as defined in section 1 of the 1927 Act. Both of these streams are non-navigable tributaries of the Chicopee River, which is itself a non-navigable tributary of the Connecticut River (Rep. Sp. M. 2, 3). The Ware River and the Swift River are wholly within the geographical limits of Massachusetts (Reprint of Answer, p. 84; see Rep. Sp. M. 2).

The Massachusetts Legislation as Modified by the War Department Findings.

Because of an alleged possible effect of the proposed diversion upon navigation on the lower reaches of the Connecticut River, the Metropolitan District Water Supply Commission, at the suggestion of the District Engineer of the War Department (Reprint of Answer, pp. 81, 89), filed applications for War Department approval of the project authorized by the Massachusetts legislation. The provisions of the Massachusetts legislation and the modifications of these provisions made by the War Depart-

ment after hearing both sides are here set out in summary form (see Rep. Sp. M. 3-4).

Ware River.

Massachusetts Legislation.

The Massachusetts Legislature (by chapter 375 of the Acts of 1926) authorizes the taking of the flood waters of the Ware River in excess of 85 million gallons a day. The legislation expressly forbids the diversion of any water between May 31 and December 1 of any year without the approval of the Department of Public Health of the Commonwealth of Massachusetts (Mass. St. 1926, c. 375, §§ 1, 4; Reprint of Answer, pp. 37, 40, 84-85; Transcript, p. 134; Joint Sum. pp. 24, 25).

War Department Findings.

The War Department, in a communication approved by the Secretary of War on March 14, 1928, permitted the diversion of all flood waters on the Ware River in excess of 85 million gallons a day (131.5 cubic feet per second) between October 15 and June 15, but prohibited absolutely the taking of any water except during that period. It was further stated in that communication that the proposed diversion of the Ware River will "have no adverse effect on the navigable capacity of the Connecticut River" (Reprint of Answer, pp. 81-87; Transcript, p. 134; Joint Sum. pp. 24, 25).

Swift River.

Massachusetts Legislation.

By chapter 321 of the Acts of 1927 the Massachusetts Legislature authorized the diversion of the water of the Swift River in excess of the quantity required to maintain a flow at Bondsville (about 5 miles below the proposed Swift River Reservoir) of 20 million gallons a day (31 cubic

feet per second). (Mass. St. 1927, c. 321, § 1; Reprint of Answer, p. 52; Transcript, pp. 132, 135; Joint Sum. p. 25).

War Department Findings.

The War Department under date of May 17, 1929, made a finding (Reprint of Answer, pp. 92-100) under the terms of which the diversion authorized by the Massachusetts legislation is permitted, except that during the period from June 1 to November 30 (both inclusive) 110 cubic feet per second (71 million gallons a day) shall be released at the dam on the Swift River (Transcript, pp. 135-136) from the impounded waters (in the proposed Swift River Reservoir) whenever the flow of the Connecticut River at Sunderland, Massachusetts (a town where a stream flow gauge is maintained about 20 miles north of the confluence of the Chicopee and Connecticut Rivers), is 4650 cubic feet per second or less; and when the flow of the Connecticut River is more than 4650 and less than 4900 cubic feet per second 70 cubic feet per second (45 million gallons a day) shall be released (Transcript, pp. 135-136; Joint Sum. p. 25).

The Secretary of War found that no impairment of the navigable capacity of the Connecticut River will result from this diversion as modified by him, and furthermore that a discharge of 4900 cubic feet per second at Sunderland corresponds to an average lower low tide gauge height of 2.1 at Hartford and a discharge of 4650 cubic feet per second at Sunderland to an average lower low tide gauge height of 2.0 at Hartford (Reprint of Answer, pp. 89-102; Transcript, pp. 135-136; Joint Sum. p. 25).

Statistical Data.

The Special Master found (and there was no substantial disagreement on these points) that the following

statistics were accurate (Rep. Sp. M. 4-5; see also Agreement in Joint Sum. pp. 2, 3).

Annual flow, Connecticut River at Massachusetts-Connecticut boundary (equivalent approximately to 11,000 million gallons a day; see Transcript, pp. 137, 656)	17,000 cubic feet per second
Yield of diversion from the Ware and Swift Rivers as permitted by the Secretary of War (Transcript, p. 215) (equivalent to 296 cubic feet per second)	191 million gallons a day
Total watershed of Connecticut River (Transcript, p. 129)	11,300 sq. miles
Watershed lying above Massachusetts-Connecticut boundary (Transcript, p. 102)	9,915 sq. miles
Drainage area of Connecticut River watershed in Connecticut	1,385 sq. miles
Drainage area of Ware River at point of partial diversion of flood waters (Transcript, p. 131)	98 sq. miles
Drainage area of Swift River at point of partial diversion (Transcript, p. 131)	186 sq. miles

The Metropolitan Area consists of 20 cities and 15 towns which are eligible to become members; these 35 cities and towns have a population of about 1,900,000 (Rep. Sp. M. 2).

The total drainage area of Ware and Swift Rivers *subject to partial diversion* is 2.93% of the total watershed of the Connecticut River above Connecticut (Transcript, pp. 139-140). The diversion of water under the terms of the findings of the Secretary of War is only approximately 2% of the average annual flow of the Connecticut River at the Massachusetts-Connecticut boundary (Transcript,

pp. 1417-1418, 656; Joint Sum. p. 3). 94% of this diversion occurs when the Hartford gauge (a recording device at Hartford, Connecticut) shows 3½ feet (Transcrpt. p. 1419; Joint Sum. p. 26), which means 1½ feet above the 12-foot depth which the government contemplates as a future channel depth to be maintained below Hartford (Rep. Sp. M. 5).

The Pleadings.

The Connecticut Bill.

The State of Connecticut, alleging that the Massachusetts project would cause that State and its citizens serious injury, brought an original bill in equity before this Honorable Court, even before the War Department had acted upon the Massachusetts petitions for approval of the project. The bill in equity seeks to enjoin Massachusetts from carrying out the project adopted by the Legislature, as that project is set out in the bill.

Connecticut [appearing not only as a proprietor of riparian lands (Bill, p. 6) and as owner of the bed of the Connecticut River within the State of Connecticut (Bill, p. 6), but also as *parens patriae* (Bill, pp. 2, 6, 10, 13)], sets forth the Massachusetts project as involving a diversion of water not only from the Swift and Ware Rivers, but also from the Millers River (Bill, pp. 9, 10, 11). The alleged diversion from these three rivers is said to be only a portion of a general plan adopted by Massachusetts which is said to include also the acquisition of the waters of the Deerfield and Westfield Rivers (both tributaries of the Connecticut River) and of the Quaboag River, a tributary of the Chicopee River (Bill, p. 10; see also Bill, pp. 2, 3; p. 5).

Connecticut avers that the Massachusetts project, if carried into effect, will cause the State of Connecticut and

its inhabitants serious damage by obstructing navigation; by increasing the intensity of pollution in the Connecticut River as it enters the State of Connecticut, to the menace of the health of the people of that State; by diminishing the alleged beneficial effects of floods upon agriculture; and by causing general damage to the property in the Connecticut River Valley.

The Massachusetts Answer.

Massachusetts, in an answer to the bill filed by leave of court, denies that any injury to navigation, to the State of Connecticut, or to the citizens of that State, or to their health, welfare, or property, will result from the proposed diversion, and affirmatively alleges that, compared to the total flow of the Connecticut River at the Connecticut-Massachusetts boundary, the flow to be diverted is negligible and insignificant (Reprint of Answer, pp. 1-30). Massachusetts also denied that the water supply project involved any diversion whatsoever from the Millers River or from any river other than the Ware and Swift Rivers (Reprint of Answer, pp. 24-25, 26). Massachusetts also sets up certain affirmative legal and equitable defenses (Reprint of Answer, pp. 30-35), including—

(*a*) The existence of an emergency within Massachusetts constituting a justification for a reasonable use of the waters to be taken by the proposed diversion (Reprint of Answer, pp. 30-31).

(*b*) The existence of an adequate remedy at law in the State of Connecticut and its citizens in the form of compensation for any injury caused to the State or its citizens (Reprint of Answer, pp. 31-32, 34).

(*c*) The serious injury to the welfare of the citizens of Massachusetts if the diversion is prohibited, compared to the negligible and trivial damage to Connecticut and

its citizens possibly caused if the diversion is permitted, which should lead a court of equity to give substitutional relief rather than specific relief (Reprint of Answer, pp. 32, 34).

(*d*) The contention that the claim of Connecticut goes beyond a claim in behalf of the State in its true capacity as *parens patriae* (Reprint of Answer, p. 34).

(*e*) The contention that, so far as relief is sought for interference with navigation, the matter is one delegated under due constitutional authority by the Congress of the United States to the Secretary of War and his subordinates, and, by the decision of the Secretary, eliminated from further consideration (Reprint of Answer, pp. 33-34, 81-102).

(*f*) The contention that the diversion is one which is "*de minimis*" and in all respects a reasonable use of the waters of the Swift and Ware Rivers by Massachusetts (Reprint of Answer, pp. 13, 14, 15, 17, 18, 21, 22, 23, 25, 26, 27, 30, 33, 35).

(*g*) Laches (Reprint of Answer, pp. 31, 34).

(*h*) The benefit to Connecticut and lower riparian owners from the stabilization of stream flow through the storage of waters in wet seasons and the release of some of such stored water in dry seasons (Reprint of Answer, pp. 14, 15, 22).

The Amendments to the Answer.

The action of the War Department did not take place until after the filing, in March, 1928, of the original answer in these equity proceedings. The answer as amended contains the pertinent portions of the applications to the War Department and of the decisions of that Department (Reprint of Answer, pp. 81-102). The amendments were allowed December 2, 1929.

Connecticut's Reply.

After the denial of a motion to dismiss the defendant's answer and the denial of a motion to strike out certain portions of that answer, Connecticut filed a reply which—

1. Denied the affirmative allegations of fact in the defendant's answer.

2. Averred that there was no necessity for Massachusetts to make use of the waters of the Ware and Swift Rivers in order to supply the Metropolitan District about Boston with drinking water because of the alleged existence of an adequate supply of drinking water in Eastern Massachusetts.

The Special Master's Report.

The report of the Special Master filed by him, after hearing the evidence offered by the parties and argument, recommends that the bill of complaint be dismissed.

Preliminary Questions of Law.

After making general findings of fact (Rep. Sp. M. 2-6), which have been discussed above, the Special Master stated the general principles of law upon which he rested his conclusions:

1. In a suit brought by one State against another, before this Honorable Court will act it must be shown by unusually clear and convincing evidence that the threatened invasion of right is of serious magnitude [citing *Missouri* v. *Illinois*, 200 U.S. 496, 521; *New York* v. *New Jersey*, 256 U.S. 296, 309; *North Dakota* v. *Minnesota*, 263 U.S. 365, 374. Rep. Sp. M. 6-7]. An injunction will not be granted where there is an adequate remedy at law.

2. The cardinal rule as between States claiming rights in interstate rivers is "equality of right" in the use of the waters involved. This Court in determining the applica-

tion of the principle to be made in any case is not limited to the principles of the common law (even if both States in their local municipal law recognize the principles of the common law). It may and usually does administer international law in the exercise of its original jurisdiction [citing *Kansas* v. *Colorado*, 206 U.S. 46, 97-100; *Wyoming* v. *Colorado*, 259 U.S. 419, 464-465], adopting in each case the rule best suited to the particular situation (Rep. Sp. M. 7-9).

3. There is no rigid principle either of the common law or of international law which prohibits the diversion of water from one watershed to another, provided the diversion is otherwise reasonable and consistent with the doctrine of "equality of right" (Rep. Sp. M. 10-12).

4. Congress, by § 10 of the Act of March 3, 1899, has delegated to the Secretary of War the power to license such diversions of water from the tributaries of navigable streams as he may find as a matter of fact do not unreasonably or materially interfere with navigation (Rep. Sp. M. 12-17).

Findings of Fact as to Alleged Damage to Connecticut.

The Special Master made specific findings of fact as to each class of damage alleged by Connecticut:

1. *Navigation* (Rep. Sp. M. 18-19). The Special Master finds as a fact that the "proposed diversions will not interfere perceptibly or materially with the navigation of the Connecticut [River]," inasmuch as it is only at times of high water that a substantial diversion will take place; the flow at low stages of the river being increased in accordance with the findings of the War Department.

2. *Agriculture and Inundated Land.* The Special Master finds (Rep. Sp. M. 20) that the alleged "damage to the hay land is not shown to be of 'serious magnitude'; and . . . far from being 'established by clear and con-

vincing evidence', is shown by no evidence making it possible of computation or proving that it is large." On the other hand the Special Master finds that any diminution in the height of the spring floods (although the floods are alleged by Connecticut to be beneficial to the hay crop) will reduce other damage caused by the floods (Rep. Sp. M. 19-20).

3. *Power Project.* The Special Master found that no damage would be caused by the proposed diversion to Connecticut power except to one possible power development at King's Island in Connecticut near the state line. The company which owns this potential power, the Special Master finds, has been authorized by the Federal Power Commission to build a higher dam to develop 50,000 horse power instead of the present development of 4000 horsepower. The work, however, has not been done, as the required capital has not been subscribed or arranged for (Rep. Sp. M. 20-21). The Special Master therefore recommends that, if these facts bring the potential King's Island power within the cases of *New York* v. *Illinois*, 274 U.S. 488, and *New Jersey* v. *Sargent*, 269 U.S. 328, 338-339, an injunction should be denied, because no present use of the water for power would be disturbed. Assuming that the cases cited do not apply, the Special Master finds that, by giving Massachusetts credit for water added to the Connecticut River in times of low flow, in accordance with the Secretary of War's requirements, $80,000 paid in money by Massachusetts to the power company, or its assigns, would be an adequate compensation for the injury to this possible power development to be caused by the proposed diversion.

4. *Shad and Other Fish Life.* The Special Master finds that the evidence introduced on this point does not indicate that the lowering of flood waters, possibly resulting from the proposed diversion, will in any way be materially injurious to the shad run (Rep. Sp. M. 22-23).

5. *Alleged Increased Pollution Due to Proposed Diversion.* The Special Master finds that the Connecticut River has been treated with an utter disregard to its purity both by Massachusetts and Connecticut. He points out, however, that the present case is not a bill brought to abate the existing pollution of the river, and that in such a bill Connecticut would not come into court with clean hands [citing *Missouri* v. *Illinois*, 200 U.S. 496, 518-520]. Upon evidence introduced by the Connecticut witnesses themselves, which the Special Master quotes at length (Rep. Sp. M. 24-28), to the effect that the "diminution in flow resulting from the proposed diversions would have no perceptible effect upon pollution" (Rep. Sp. M. 28), he finds that the plaintiff has failed to prove that any material pollution damage to Connecticut will result from installing and operating the proposed Ware and Swift works (Rep. Sp. M. 28).

Findings of Fact as to Whether Boston Ought to be Compelled to Take Its Domestic Water Supply from Northeastern Massachusetts.

The Special Master, with respect to the issues raised by the Connecticut Reply as to whether or not there existed in Eastern Massachusetts a suitable and adequate supply of drinking water for the Metropolitan District about Boston, found generally that there were certain sources in Eastern Massachusetts from which Boston might make available a considerable amount of water, but that most of the water (including the Merrimack River, Rep. Sp. M. 52) in Eastern Massachusetts, not already used, is of a quality much inferior to that of the Ware River and the Swift River, that any project for using such water would be inferior, from an engineering standpoint, to the Ware-Swift development, that whatever inferior water might be realized from the Eastern Massachusetts sources outside

of the polluted Merrimack River would be inadequate in quantity (Rep. Sp. M. 39), filling only a part of the requirements, and that all the eastern waters (including the Merrimack River) would constitute a supply largely of uncertain duration which in whole or in part might have to be thrown away in the future (Rep. Sp. M. 39 and 51-52). Referring to the three reports (Exhibits C-1, C-2, C-3) and to the Acts 1926, c. 375, and Acts 1927, c. 321, the Special Master also stated as follows: "I think these investigations and the legislative acts show a public sentiment against the eastern water supplies and make a *prima facie* case that these supplies are inadvisable, either because inadequate or unfit" (Rep. Sp. M. 30).

The Connecticut Exceptions.

The complainant, the State of Connecticut, has taken seventy-five exceptions to the findings and rulings of the Special Master. They may be roughly grouped as follows:

I. Exceptions to Findings as to Scope and Nature of Massachusetts Project.

A. Exceptions as to Findings of Fact.

1. As to the character and extent of the proposed diversion with reference to the flow of the Ware and Swift Rivers (Exc. No. 1, p. 4). [This exception is based wholly upon the complainant's objection to characterizing the diversion of Ware River waters as a diversion of "flood" waters. The objection is one solely of nomenclature. The Special Master adopted the *description* of the diversion contained in Mass. St. 1926, c. 375, § 1 (Reprint of Answer, p. 2). His analysis of the *effect* of the diversion was based upon the quantity of water actually to be diverted from the Ware River under the War Department find-

ings. What the diversion is called is of no importance, as long as its character and extent clearly appear. The exception is without merit.]

2. As to the proportion of the average flow of the Connecticut River (Exc. No. 2, p. 5).

3. As to the effect of the proposed diversion on the height of the Connecticut River in Connecticut (Exc. Nos. 3, 4, pp. 5-7).

4. As to the possibility of a new project involving in the future a further diversion of waters by Massachusetts (Exc. Nos. 5, 6, pp. 7-8).

5. As to the intention of Massachusetts to comply with the terms and conditions of the finding of the Secretary of War (Exc. Nos. 6, 7, pp. 8-10).

B. Exceptions as to Rulings of Law.

1. As to the form of decree recommended (Exc. Nos. 8, 9, 23, pp. 10, 13).

2. As to the law applicable to a controversy between two *quasi*-sovereign states in a dispute involving an interstate and international stream (Exc. Nos. 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, pp. 10-13).

3. As to the construction adopted by the Special Master of the Massachusetts statutes authorizing the Ware–Swift project (Exc. Nos. 16, 20, pp. 12, 13).

4. As to the materiality of evidence as to a conjectural future diversion (Exc. No. 19, p. 12).

II. Exceptions to Findings as to Navigation.

A. Exceptions to Findings of Fact.

1. As to the effect of diversion on navigation (Exc. No. 24, pp. 13-14).

2. As to the negotiations between Massachusetts and the War Department (Exc. No. 25, pp. 14-15).

B. Exceptions as to the Law.

1. As to the power of the Secretary of War and of Congress (Exc. Nos. 26, 27, 28, 38, pp. 15-17).

2. As to the applicability of §§ 9 and 10 of the Act of March 3, 1899 [30 STAT. AT L. 1151, U.S. Code, Tit. 33, §§ 401, 403], to the details of the actual structures which Massachusetts proposes to erect in the valleys of the non-navigable Swift and Ware Rivers and to those streams (Exc. Nos. 29, 30, 31, 35, pp. 15-17).

3. As to the scope of the powers of the Secretary of War under §§ 9 and 10 of the 1899 Act with respect to the approval of projects for the diversion of water from non-navigable tributaries of navigable streams, on the ground that such diversions will not in fact unreasonably or materially affect navigation or commerce (Exc. Nos. 32, 33, 34, 36, 37, 75, pp. 16-17, 34; see also Exc. No. 18, p. 12).

III. Exceptions to Findings as to Effect of the Massachusetts Project on Connecticut Interests Other Than Navigation.

A. Power. (See Rep. Sp. M. 20-21.)

1. Exceptions to the findings of fact that the damage to the capitalized value of the undeveloped power which would be affected by the Massachusetts project amounted only to $80,000 (Exc. Nos. 39, 40, 41, pp. 17-19).

2. Exceptions to the Special Master's mixed ruling of law and fact that the payment of money damages at law by Massachusetts to the Connecticut owners of the potential power when and if they develop it, would adequately compensate Connecticut for the injury to be caused by the proposed diversion; and that no injunction should issue (Exc. Nos. 42, 43, 44, 45, 46, pp. 19-20).

B. Agriculture.

1. Exceptions to the finding of fact that the extent of the damage to agriculture and the benefit to flooded riparian lands caused by a diminution in the height of the spring floods by the proposed diversion would not be measurable or material, and certainly not of serious magnitude (Exc. Nos. 47, 48, 49, 50, pp. 20-23).

2. Exceptions to the rulings of law by the Special Master that the alleged damage to agriculture proved by Connecticut (taken in connection with all other damage shown as likely to be caused by the execution of the Massachusetts project) is not sufficient to warrant enjoining one *quasi*-sovereign state at the suit of another (Exc. Nos. 51, 52, 53, p. 23).

C. Pollution of the Connecticut River.

1. *Exceptions to Findings of Fact*—

(*a*) as to the present state of the Connecticut River and as to the immaterial effect of the Massachusetts project upon the pollution content of the river (Exc. No. 54, p. 24).

(*b*) as to the practice of the State of Connecticut and of the Commonwealth of Massachusetts with respect to the use of the streams in those States for drainage and sewage disposal (Exc. No. 55, p. 24).

2. *Exception to Special Master's Ruling of Law* that in this case the present pollution of the Connecticut River is immaterial, inasmuch as Connecticut has not shown that the Ware–Swift project, if carried into execution, will of itself cause any material damage to the State of Connecticut (Exc. No. 56, p. 26).

D. Fish Life.

Exception to the finding of fact that the Massachusetts project would not injure the shad or other fish life in the Connecticut River (Exc. No. 57, p. 26).

IV. Exceptions to Findings as to Objections to Supplies of Water in Eastern Massachusetts Alleged by Connecticut to Exist.

A. Exceptions to Findings of Fact.

1. As to the water supply of Lawrence, Massachusetts, and the extraordinarily large use of bottled water in that city because of the popular distaste and dread of the polluted waters of the Merrimack River (Exc. No. 58, pp. 27-28).

2. That the Merrimack River is "a legalized public sewer," and that there is "no certainty that it will not become more polluted" (Exc. No. 59, p. 28).

3. To the failure to find that Boston could be supplied with water even if the Ware and Swift supplies could not be obtained (Exc. No. 66, p. 31).

4. To the failure to find that Boston's present supply needs chlorination (Exc. No. 60, p. 28).

B. Exceptions to the Conclusions of Mixed Law and Fact.

1. That, inasmuch as Connecticut has shown no injury of great magnitude and no injury for which the damages at law are not adequate, Boston should not be compelled to resort to Eastern Massachusetts waters which are grossly inferior to and greatly more hazardous than the Ware-Swift supply; particularly as Connecticut has not proved that adequate, safe, and suitable supplies of water are available in Eastern Massachusetts to meet the needs of that section of the State above and beyond the supplies which Massachusetts has shown to be available (Exc. Nos. 61, 62, 63, 64, 65, 67, pp. 28-33).

2. Which are said to be based upon consideration by the Special Master of elements to which it is averred he should not have paid any attention or upon his failure to consider matters which it is said by Connecticut were of importance (Exc. Nos. 68, 69, 70, 71, 72, 73, 74, 75, pp. 33-34).

SUMMARY OF ARGUMENT.

I. The Special Master correctly found that Connecticut has not proved that that complainant State or its citizens will suffer any appreciable or substantial damage as the result of the execution of the Massachusetts project. He properly recommended that no injunction should be granted in the absence of such proof. (See *infra*, p. 25.)

A. In order to be entitled to relief by injunction, Connecticut in this suit in equity against another *quasi*-sovereign State must prove damage of serious magnitude to her sovereign rights or to interests which she represents as *parens patriae*. (See *infra*, p. 25.)

B. The complainant State in a suit such as the case at bar must show present or presently threatened damage to existing interests. (See *infra*, p. 27.)

C. The Massachusetts project is contained in the Massachusetts legislation as modified by the War Department findings. It involves no diversion of waters from rivers other than the Ware and the Swift. Massachusetts must obey the War Department findings while they remain in force. (See *infra*, p. 30.)

D. The findings of the Special Master, not only warranted, but compelled by the weight of the evidence, show that the Ware–Swift project will cause no material injury to present Connecticut interests. Any injury suffered is *de minimis*. (See *infra*, p. 41.)

1. There is no proof of injury to existing interests of navigation. (See *infra*, p. 41.)

2. There will be no injury to Connecticut because of increased pollution of the Connecticut River if the Massachusetts project is carried out. (See *infra*, p. 52.)

3. Agriculture in Connecticut will not be damaged in measurable degree by the Massachusetts project. (See *infra*, p. 57.)

4. No existing Connecticut power plant will be affected by the Massachusetts project. Complete compensation for any injury to potential future developments can be made by the payment of money damages. (See *infra*, p. 63.)

5. Fish life in the Connecticut River will not be affected by the Massachusetts project. (See *infra*, p. 71.)

II. The action of the Secretary of War and the Chief of Engineers upon the applications for the approval of the contemplated diversions constituted a proper performance of the duties delegated to them by the Act of Congress of March 3, 1899. That action, by deciding that the diversion is not objectionable (within the limits specified in the War Department findings), so far as *navigation* is concerned, forecloses any contention of Connecticut that the diversion will injure navigation. (See *infra*, p. 74.)

III. The Special Master was correct in ruling that the principle of "equality of right" controlled the use of the Connecticut River by the States through which it flows. Massachusetts is entitled to make a reasonable use of the waters of the Connecticut River, including the right to appropriate permanently an equitable portion of its waters. (See *infra*, p. 98.)

A. The law applicable to the case at bar is to be determined by this Honorable Court in the light of the whole situation of fact; having due regard to the decisions of this Court in other interstate cases, to the municipal law in force in Massachusetts and Connecticut, to pertinent provisions of international law and practices, and to the customary methods of obtaining and using water in the two States here involved. No one of these factors is all-important. (See *infra*, p. 99.)

B. The decisions of this Court establish the principle of the equitable division of the benefits arising from an interstate river among the States through which the river

passes. This doctrine referred to by the Special Master as the rule of "Equality of Right" would be applicable to the case at bar, provided that Connecticut had proved damage or injury of serious magnitude. (See *infra*, p. 106.)

C. International law establishes the principle of equitable division of the benefits of interstate waters as between the sovereigns through whose lands the waters pass. In making an equitable division of beneficial use, due weight must be given to the comparative benefit to be derived by each sovereign from each particular use. The fundamental and most important use of water is for quenching thirst and for other domestic purposes. (See *infra*, p. 114.)

D. Under the municipal law both of Connecticut and of Massachusetts, so far as it furnishes an analogy of weight in this case, the Massachusetts project would be deemed reasonable. (See *infra*, p. 121.)

1. Under the riparian law in force both in Massachusetts and in Connecticut a riparian owner is entitled to make a reasonable use of the waters flowing past his land, having due regard for the interests of upper and lower riparian owners upon the same stream. (See *infra*, p. 121.)

2. Connecticut habitually permits diversions of streams to other watersheds for the purpose of supplying municipalities with water for domestic use. Connecticut in equity cannot complain if Massachusetts makes reasonable use of interstate waters arising within her borders for similar purposes, even if a diversion be necessary; provided Massachusetts does not permanently abstract more than the share of such interstate waters to which she is entitled under the doctrine of equal division of benefit. (See *infra*, p. 127.)

E. The Special Master was correct in finding that the Metropolitan District about Boston ought not to be com-

pelled to resort to inferior, polluted, and inadequate waters said by Connecticut to be available in Eastern Massachusetts. (See *infra*, p. 134.)

1. The contention of Connecticut that Massachusetts has available supplies of water elsewhere than in the Ware and Swift Rivers is immaterial, unless this Court reverses the findings of fact of the Special Master and decides that Connecticut has shown substantial damage resulting from some act of Massachusetts. In that event the evidence upon the existence of other water sources may be material as bearing upon the issue of whether this Honorable Court in Equity ought to grant any specific or injunctive relief. (See *infra*, p. 134.)

2. Massachusetts has established, as the Special Master has found, that there are not adequate supplies of pure water in Eastern Massachusetts to meet the demands of the population of that region in the future and that it is necessary to obtain the Ware Swift supply chosen by the Massachusetts Legislature after due deliberation. Connecticut has not shown that the Special Master was incorrect in his conclusion that Boston ought not to be forced to adopt the inadequate schemes suggested by Connecticut for supplying the city with hazardous, treated water from inadequate and polluted Eastern Massachusetts sources. (See *infra*, p. 136.)

POINTS AND AUTHORITIES.

I. THE SPECIAL MASTER CORRECTLY FOUND THAT CONNECTICUT HAS NOT PROVED THAT THAT STATE OR ITS CITIZENS WILL SUFFER ANY APPRECIABLE OR SUBSTANTIAL DAMAGE AS THE RESULT OF THE EXECUTION OF THE MASSACHUSETTS PROJECT. HE PROPERLY RECOMMENDED THAT NO INJUNCTION SHOULD BE GRANTED IN THE ABSENCE OF SUCH PROOF.

A. In Order to be Entitled to Relief by Injunction, Connecticut in This Suit in Equity against Another Quasi-Sovereign State must Prove Damage of Serious Magnitude to Her Sovereign Rights or to Interests which She Represents as Parens Patriae.

One doctrine stands out more clearly than any other established by this Honorable Court in its exercise of original jurisdiction over justiciable controversies between the *quasi*-sovereign States of the Union. That doctrine is emphatically expressed in the following language of the Court, and we submit it is applicable to the case at bar:

> "Before this court can be moved to exercise its extraordinary power under the Constitution to control the conduct of one State at the suit of another, the threatened invasion of rights must be of serious magnitude and it must be established by clear and convincing evidence."
>
> Mr. Justice *Clarke*, in *New York* v. *New Jersey*, 256 U.S. 296, 309.

> "Before this court ought to intervene the case should be of serious magnitude, clearly and fully proved, and the principle to be applied should be one

which the court is prepared deliberately to maintain against all considerations on the other side."

Mr. Justice *Holmes*, in *Missouri* v. *Illinois*, 200 U.S. 496, 521.

"In such action by one State against another, the burden on the complainant State of sustaining the allegations of its complaint is much greater than that imposed upon a complainant in an ordinary suit between private parties."

Chief Justice *Taft*, in *North Dakota* v. *Minnesota*, 263 U.S. 365, 374.

The statements just quoted were all made in controversies between *quasi* sovereign States in which the complainant State was seeking equitable relief against an alleged injury to its sovereign right threatened by the defendant State. The doctrine established by these decisions—the doctrine that substantial injury of great magnitude must be shown by unusually clear and convincing proof—has not been questioned in the decisions of this Honorable Court. It is the fundamental doctrine upon which interstate equity suits before this Court are decided. The authorities just cited, therefore, in large measure dispose of Connecticut exceptions numbered 9, 51, 52, 53, 54, 56, pp. 10, 23, 24, 26, in view of the findings of fact by the Special Master to the effect (see *e.g.* Rep. Sp. M. 28) that "Connecticut has failed to show any important and very considerable" present damage as the result of the Massachusetts project.

Massachusetts contends, therefore, that in this case Connecticut must show by clear and incontrovertible proof, far beyond that required of an individual in a suit between private parties—

(1) not only that some sovereign or property right of that State itself or right which the State is bound to protect as *parens patriae* is threatened by Massachusetts; but also (2) that the Massachusetts project, if not enjoined, will cause injury of great magnitude to Connecticut.

It is submitted that, if this Court adopts as correct the Special Master's finding to the effect that no such damage has been shown by Connecticut, further consideration of the case is unnecessary, and that Connecticut's failure on this point is fatal to its case.

We shall contend below [*infra*, Argument heading II, especially subsection B2] that, in view of the plenary powers given to the Congress by the Constitution with respect to the regulation of interstate and foreign commerce and in view of the delegation by the Congress to the Secretary of War of many of those powers (so far as navigable waters are concerned), Connecticut has no standing as *parens patriae* to protect any interest of navigation.

> See *Southern Pacific Co.* v. *Olympian Dredging Co.*, 260 U.S. 205, 207-208.
>
> *United States* v. *Chandler-Dunbar Co.*, 229 U.S. 53, 62-63.
>
> *Monongahela Bridge Co.* v. *United States*, 216 U.S. 177, 195.

Compare

> *Florida* v. *Mellon*, 273 U.S. 12, 18.
>
> *Massachusetts* v. *Mellon*, 262 U.S. 447, 485-486.

B. The Complainant State in a Suit such as the Case at Bar Must Show Present or Presently Threatened Damage to Existing Interests.

A second doctrine limiting relief sought by one State against another is [the principle] that a complainant

State, in order to obtain equitable relief against a sister sovereign State, must show that some presently existing interest is affected by the action, or presently threatened action, of the defendant State.

In *New York* v. *Illinois*, 274 U.S. 488, New York was seeking to enjoin the Sanitary District of Chicago "from continuing a very substantial diversion of water from Lake Michigan." One paragraph of the bill in equity proceeded on the theory that the diversion sought to be enjoined would interfere with the use of the waters of the Niagara River by the complainant State and her citizens for the development of power. This Court, upon motion of the defendant, struck from the bill this paragraph, and, through Mr. Justice *Van Devanter*, spoke as follows of the allegations contained in the paragraph (at pp. 489-490):

> "But it does not show that there is any present use of the waters for such purposes which is being or will be disturbed; nor that there is any definite project for so using them which is being or will be affected. . . . The suit is one for an injunction, a form of relief which must rest on *an actual or presently threatened* interference with the rights of another. Plainly no basis for such relief is disclosed in what is said about water power development. At best the paragraph does no more than present abstract questions respecting the right of the plaintiff State and her citizens to use the water for such purposes in the indefinite future." (Italics ours.)

To the same effect is that portion of the decision in *New Jersey* v. *Sargent*, 269 U.S. 328, found at pages 338-340. Compare *Florida* v. *Mellon*, 273 U.S. 12, 18.

The Special Master in the case at bar recommended the application of this doctrine to the Connecticut contention that a single potential water power, as yet entirely unde-

veloped, if it were developed at some future time, could generate slightly less current each year, if the Massachusetts water-supply project (as modified by the War Department findings) were carried out (see Rep. Sp. M. 20-21). The Special Master also (Rep. Sp. M. 52-53) recommended that the doctrine be applied to the Connecticut contention that at some future time Massachusetts would endeavor to take additional waters from the valley of the Connecticut River in order at that time to supply Northeastern Massachusetts with pure drinking water. The Special Master, although he did not exclude any evidence offered in support of any contention, disregarded this evidence in his report as immaterial.

The evidence offered by Connecticut on this point shows clearly how sensible is the rule that this Court has adopted refusing to consider (in suits between States under its original jurisdiction) evidence which at most shows that the complainant State may perhaps be subjected to some injury at an unascertainable date in the distant future. Connecticut endeavored to prove by extracts from reports of various Massachusetts legislative committees in 1895, 1922, and 1926 [some of which reports were not adopted] that the present Massachusetts project was something more than the project actually contained in the Massachusetts legislation [see Reprint of Answer, pp. 36-80] as modified by the War Department findings [see Reprint of Answer, 81-102]. Connecticut also introduced evidence in an attempt to prove that the size of the actual construction, planned or being built by Massachusetts, is excessive for the present Massachusetts project, and indicates that at some future date, possibly after 1970, the Massachusetts Legislature is going to enact statutes authorizing a further diversion by means of these works [see Joint Sum. p. 11 *et seq.*; Transcript, pp. 89, 197, 198, 207, 211, 248, 357, 686, 691, 697, 713, 1865, 2172]. Such indefinite evidence of unaccepted or rejected recommendations of legislative

committees and of conjectures as to the distant future by engineers hazarding a guess as to the needs of two generations hence is hardly the type of proof upon which this Court has been accustomed to enjoin a *quasi*-sovereign State of the union from carrying out a present project which is carefully confined to a narrow compass by statute and by two valid findings of the Secretary of War. The contentions of Connecticut in exceptions 5, 6, and 19 are, it is submitted, without merit (see Conn. Exc. pp. 7-8, 12).

C. The Massachusetts Project is Contained in the Massachusetts Legislation as Modified by the War Department Findings. It Involves No Diversion of Waters from Rivers Other than the Ware and the Swift. Massachusetts Must Obey the War Department Findings while They Remain in Force.

1. The Statutes Themselves Authorize No Diversion from any Rivers but the Ware River and the Swift River.

The Special Master (Rep. Sp. M. 53) found that the "Massachusetts legislation confines itself to taking certain waters from the Ware and Swift" (see also Rep. Sp. M. 3). This finding is clearly right. [It is excepted to by Connecticut, see Conn. Exc. No. 19, p. 12.] The Massachusetts legislation is contained in Mass. St. 1926, c. 375, and Mass. St. 1927, c. 321 (Reprint of Answer, pp. 36-80). This legislation has been briefly summarized above, but certain provisions with respect to the waters to be included in the diversions are here pertinent.

Ware River Act.

Mass. St. 1926, c. 375, created a special Metropolitan District Water Supply Commission of three members (§ 1, Reprint of Answer, p. 36). This Commission is authorized, for the purpose of extending and increasing the water

supply of the Metropolitan water system, to divert into the Wachusett Reservoir (the principal reservoir now supplying Boston) flood waters of the Ware River (defined in § 4, Reprint of Answer, pp. 40-41, as "the waters . . . at and above the point of diversion . . . in excess of a flow of 85 million gallons a day, meaning thereby that on any day when the actual flow of said river is less than 85 million gallons no water shall be diverted") at a point near the village of Coldbrook.

The Commission is directed to construct the works necessary for this diversion at such grade and of such capacity that they can be used as a part of works later to be constructed for diverting into the Wachusett Reservoir the waters of the Swift River in substantial accordance with the plans and recommendations contained in House Document (1922) No. 1550 (Exhibit C-1).

By section 5 (Reprint of Answer, pp. 41-43) the Commission is authorized to acquire the water rights and property on the Ware River necessary for the diversion and for the protection of the purity of the water of the river, either by purchase or by a taking in accordance with the provisions of the eminent domain laws of the Commonwealth (General Laws, 1921, c. 79, as amended). It is expressly provided that "the owner of any real estate, whether *within or without* the commonwealth, which is not taken, but is injured by the taking of the waters of Ware River under authority of this act, or by the construction of the works incidental thereto, shall be entitled to damages therefor, and may recover the same from the Commonwealth, as in the case of a taking in accordance with the provisions of this act." (Italics ours.)

Swift River Act.

By St. 1927, c. 321, the Metropolitan District Water Supply Commission, established by the 1926 act, is author-

ized to extend the water supply of the Metropolitan water system by diverting into the Wachusett Reservoir the waters of the Swift River and Beaver Brook (a tributary of the Ware River). This diversion is to be accomplished by extending the tunnel between the Wachusett Reservoir and the Ware River to the Swift River, by the construction of a temporary dam just below the confluence of the East and Middle branches of that river near the village of Greenwich, and ultimately by the construction of a dam across the Swift River near the boundary line between the towns of Ware and Enfield, and also by a dam across Beaver Brook near this boundary line, thereby creating a storage reservoir in the Swift River Valley.

Section 1 (Reprint of Answer, pp. 51-53) definitely provides that "no water shall be diverted or stored in any calendar day when the flow of the Swift river at or just above the village of Bondsville . . . is less than twenty million gallons [a day], and there shall be discharged from any storage created by the commission above said village a sufficient amount of water to maintain, so far as such storage will allow, a flow of said river at said village of not less than twenty million gallons in each calendar day."

By section 2 the Commission is authorized to construct as a part of the Metropolitan water system such works as may be necessary, and it is further provided that "the works authorized by this act shall be of such dimensions, capacities, and areas as the commission may determine; and may from time to time be enlarged or modified as the commission may determine, and may be so constructed, enlarged or modified as to allow for a future increase in capacity to take care of the diversion of other streams in substantial accordance with the plans and recommendations of the joint board on water supply needs and resources of the commonwealth as contained in its report to the general court in nineteen hundred and twenty-two printed as house document fifteen hundred and fifty of

that year; *but nothing in this act shall be held to authorize any taking or diversion of any waters of the Millers river water shed or to affirm the intention of taking at any future date any unutilized flood waters of said Millers river*" (Reprint of Answer, pp. 53-54; italics ours).

Section 4 gives the Commission the right, for the purposes of the act, to take by eminent domain, or to acquire by purchase, such lands, water, water rights, easements, and other property or interests in property as it may deem necessary or desirable; provided, however, that the amount of water to be let down into the Swift River as provided in section 1 of the act shall not be diminished.

Section 4, taken together with section 2 (Reprint of Answer, p. 54), has been construed by the Metropolitan District Water Supply Commission, and its Chief Engineer, as authorizing no taking of any waters from the Millers River (see Transcript, pp. 93, 402-404; see p. 494).

It is provided that takings under the act may be in fee or otherwise (Reprint of Answer, p. 56), and that they shall conform to the provisions of chapter 79 of the General Laws of Massachusetts, with the exception, *inter alia*, that "for all rights of diversion taken under this act appurtenant to *land not taken* the right to damages shall vest upon and not before the actual diversion of water." (Italics ours.) At any time the Commission is authorized to "make such settlements as it may deem for the best interest of the commonwealth with *any* person or corporation who may be or has been damaged by any . . . injury to his water rights under this act." (Italics ours.) It is further authorized to construct and furnish a compensatory flow in lieu of damages, if such arrangements can be made by contract.

Section 7 (Reprint of Answer, p. 62) gives the Commission, either before or after a taking, power to make

such settlements as it may deem for the best interest of the Commonwealth.

A detailed discussion of the remedies provided by these acts and the common law of Massachusetts to any person whose land or property is damaged by these diversions will be found later in this brief under the heading "An Adequate Remedy at Law" (*infra*, p. 65).

It would seem clear that the two acts, just summarized and quoted in part, *affirmatively authorized* diversions only from the Swift River and the Ware River. The 1927 Act specifically forbids any taking of water from the Millers River, which is the only river as a matter of geography sufficiently close to the present project readily to permit diversion thereto. An examination of the map found at the end of the Special Master's Report will show that this is true. Obviously the Legislature, in forbidding the Metropolitan District Water Supply Commission to make any diversion from the Millers River, felt that it had foreclosed the possibility of any diversion from rivers other than the Swift and the Ware by virtue of either the 1926 or 1927 legislation.

The Legislative Reports.

That no diversions from rivers other than the Swift River and the Ware River were contemplated by either the 1926 or 1927 Act becomes exceedingly clear when the legislative history of the two acts is taken into consideration. It is submitted that the legislation is not ambiguous, and that on its face it is clear that only some of the waters of the Swift and the Ware Rivers are included within the Massachusetts project. If, however, this Court should deem the Act to be ambiguous, resort may be had to legislative history in order to clear up the ambiguity and to show that the construction of the statute is that for which Massachusetts contends and which the Special Master has

found. *Duplex Co.* v. *Deering*, 254 U.S. 443, 474-475; *Wisconsin Railroad Commission* v. *C., B & Q. Railroad Company*, 257 U.S. 563, 589; compare *Everard's Breweries* v. *Day*, 265 U.S. 545, 561; *United States* v. *Missouri Pacific Railway*, 278 U.S. 269, 278; *Richbourg Motor Company* v. *United States*, 281 U.S. 528, 536.

Three legislative reports (see Joint Sum. p. 4) were presented in evidence before the Special Master by Connecticut, apparently for the purpose of showing that Massachusetts contemplates further diversions from the Connecticut River or its tributaries in addition to those authorized by the present legislation from the Ware and Swift Rivers.

The 1895 Report.

The first of these was House Document (1895) No. 500, Report of the Massachusetts State Board of Health (Exhibit C-3, Transcript, pp. 81, 228, 1588, 2171). It was as the result of this report that the present supply of Boston, the Wachusett Reservoir on the Nashua River, was adopted (Transcript, p. 1589; Joint Sum. p. 218). From this report (Transcript, p. 228) an attempt was made to show a general plan of diversion of a large number of tributaries of the Connecticut River, and the following paragraph of the report (p. XVI) was pointed out as a statement of this plan (Transcript, pp. 228-229):

> "The very great merit of the plan now submitted is to be found in the fact that this extension of the chain of the metropolitan water supplies to the valley of the Nashua will settle forever the future water policy of the district, for a comparatively inexpensive conduit can be constructed through to the valley of the Ware River, and beyond the Ware River lies the valley of the Swift; and, *in a future so far distant that we*

> *do not venture to give a date to it*, are portions of the Westfield and Deerfield rivers, capable, when united, of furnishing a supply of the best water for a municipality larger than any now found in the world." (Italics ours.)

Two answers to the Connecticut suggestion that here is a Massachusetts plan which threatens the complainant's welfare, may be made: The first is that the 1895 report is precisely what one Massachusetts witness (Dr. Winsor, Transcript, p. 79) called it—"ancient history." It can hardly be said that the suggestion of future policy by the members of a commission of a generation ago is the present action of a sovereign State, particularly when only the first of a series of projects outlined by that commission was actually adopted by the Legislature to which it reported (Transcript, pp. 229, 230). The second obvious reason for refusing to regard the 1895 report as a serious threat of Eastern Massachusetts diversion of the Westfield and Deerfield Rivers is the fact that the report itself refers to any such project as belonging "in a future so far distant that we do not venture to give a date to it."

House Document (1922) No. 1550.

A second report introduced by Connecticut was Massachusetts House Document (1922) No. 1550 (Exhibit C-1, Transcript, p. 33), Report of Joint Board on Water Supply Needs and Resources. This report, embodying the recommendations of the Massachusetts State Department of Health and the Metropolitan District Commission, sitting as a joint board, as to the appropriate method of extension of the Metropolitan District water supply, in general was the basis of the 1926 and 1927 acts. Briefly, this report recommended extending a tunnel westerly from the Wachusett Reservoir to the Ware River near Coldbrook

(Transcript, p. 86); thence further west to the valley of the Swift River, where a reservoir was to be built in which to store the freshet flows of three streams, the Swift, the Ware, and the Millers Rivers (see Exhibit C-1, pp. 18-21). This report, although it referred casually and briefly to the suggestion in the 1895 report (Exhibit C-3) that extensions might be made at some distant future date to the Deerfield and the Westfield Rivers, definitely advised abandonment of all consideration of the Westfield River as a potential water supply source for Eastern Massachusetts, on the ground that its waters were needed as a supply for Western Massachusetts cities and towns now growing rapidly (Exhibit C-1, p. 22). The 1926 and 1927 Massachusetts legislation (St. 1926, c. 375; St. 1927, c. 321; Reprint of Answer, pp. 37-80) adopted to a great extent the recommendations of the 1922 report and referred to the report as a general guide for the Construction Commission in its work in the Ware and Swift River watersheds, but *with an express prohibition upon the taking of any of the waters of the Millers River* (Mass. St. 1927, c. 321, § 2; Reprint of Answer, p. 54).

It is submitted that the legislative history preceding the enactment of the Massachusetts statutes lends no support whatsoever to the Connecticut contention that the Ware–Swift project is part of a much larger scheme of diversion. It is Connecticut's contention that the Legislature of Massachusetts indicated its intention to authorize a taking of waters of the Deerfield, Westfield, and Quaboag Rivers by expressly excluding only the Millers River; and that, had the intention been otherwise, the Legislature would have expressly negatived a taking from those rivers as well as from the Millers River. This argument is unfounded. The reason for the express exclusion of the Millers River in the Act of 1927 was that that particular river was recommended as a source in the report of the Commission upon which the act was founded, while the other three

rivers (Deerfield, Westfield, and Quaboag) were not definitely recommended by that Commission. The exclusion of the Millers River in the Act of 1927 was therefore merely the Legislature's method of emphasizing its rejection of the only source recommended other than the Ware and Swift Rivers.

It should be noticed that the 1922 report was not acted upon by the Legislature hastily and without proper consideration. Because of objections to the Joint Board Report (Exhibit C-1) by interested groups (Transcript, p. 72), another commission (generally known as the Gow Hazen Commission) made an examination of the situation, this commission being set up in substance as a Devil's Advocate to oppose the legislative canonization of the Ware-Swift project. Their report (House Document No. 900 of 1926), officially known as the report of the Metropolitan Water Supply Investigating Commission (not to be confused with the Metropolitan District Water Supply Commission, of which Dr. Winsor is Chief Engineer, Transcript, p. 72), recommended taking the Ware River flood waters, together with certain Eastern Massachusetts sources (including the Assabet, Ipswich, and Sudbury Rivers), for a supply for Metropolitan Boston. The Gow Report (Exhibit C-2) raised a far greater furor of objection than the Joint Board Report. The Ipswich Valley communities (Transcript, pp. 1593, 1744A, 1761, 1763, 1875; Joint Sum. pp. 218, 228, 237, 238, 250), Concord (Transcript, pp. 1613, 1711, 1715; Joint Sum. pp. 222, 236, 237), and the Assabet towns (Transcript, pp. 1613, 1715; see pp. 1605-1607; Joint Sum. pp. 222, 237, 219, 220) opposed the Gow scheme (see Exhibit C-2) vigorously on the ground that it would be a serious encroachment upon water sources which they themselves then needed or would shortly need for water supplies, as well as causing immeasurable damage to their communities by taking away water from very small streams needed for

process water in industry, and for the dilution of the inevitable sewage, industrial waste, and surface drainage of their heavily populated areas. Even ardent proponents of the Gow scheme admitted that it would be "simply a makeshift" for the Metropolitan District (see Transcript, p. 1875; Joint Sum. pp. 250, 251), and, as might be expected, the Massachusetts Legislature rejected it. It was not surprising, therefore, that the Massachusetts General Court adopted a substantial portion of the Joint Board Report of 1922 (Exhibit C-1) although, as we have stated, *it refused to adopt so much of the recommendations of that Board as involved any diversion of water from the Millers River* (see Transcript, pp. 31, 32, 48, 54, 93; Mass. St. 1927, c. 321, § 2; Reprint of Answer, p. 54). There is no merit in the Connecticut exception No. 17, page 12.

2. *Massachusetts not only Proposes to Comply with the War Department Rulings; It Must Do So.*

The Special Master found (Rep. Sp. M. 53) that "Massachusetts says she intends to divert no more water than the Secretary of War permits and in every way to follow the conditions he imposes. It is true that counsel in this case cannot control the future action of Massachusetts. But it is sufficient for this case to say that injunction should not issue against something merely feared at some indefinite time in the future. Injunction issues to stop present injuries or those presently threatened. The judgment in this case, if it goes in favor of Massachusetts, should settle her right to take only so much water and in such manner and at such times as the Secretary of War permits. It will in no way bar or diminish the right of Connecticut to proceed against the taking of additional future water. For this reason I disagree with the suggestion advanced by Connecticut on the hearing, that she is entitled at least to an injunction restraining Massachusetts from taking

any more water than the Secretary of War has authorized. As there is no threat on the part of Massachusetts to do that, such an injunction does not seem to me proper."

This finding and recommendation was entirely warranted. Counsel for Massachusetts, during the hearings, frequently stated for the record that Massachusetts proposed to abide by the War Department findings (see, *e.g.*, Transcript, p. 494), and it was so understood on both sides. The whole case was tried on the theory that Massachusetts was bound to conform to the limitations set by the Secretary of War. The Chief Engineer of the Massachusetts project (Dr. Frank E. Winsor) testified (Joint Sum. p. 25; Transcript, pp. 136-137) that he was intending to comply with the War Department findings and that he was making the plans for the project in compliance with those findings. Certain of the statements of alleged fact in the Connecticut exception numbered 7 (p. 9) are thus incorrect.

It is submitted that the Secretary of War has clear power to object to the execution of a project on a non-navigable tributary of a navigable river to the extent that the project will affect navigation on the main stream. *United States* v. *Rio Grande Irrigation Co.*, 174 U.S. 690, 707 *et seq.* The Special Master so ruled. The limitations and conditions imposed by the Secretatry of War in his findings were clearly in aid or protection of navigation, creating as they do restrictions upon the period during which any diversion from the Ware River may take place and, in the case of the Swift River, requiring as a condition of the execution of the project that Massachusetts guarantee a reasonable flow in the Swift River during dry seasons. In many instances this guarantee will result in a release of waters from storage in the proposed Swift River Reservoir in excess of the normal stream flow in that river at the time of the release of water (see Rep. Sp. M. 13, 18-19; see Exhibits opposite p. 19). As the Special Master put it (Rep. Sp. M. 13), the Secretary of War "required a discharge

from the Swift River Reservoir during the critical period of low water, which would increase instead of diminish the flow of water in the Connecticut [River], and to that extent better navigation." With the Secretary thus acting in aid of navigation, there can be no doubt of the obligation resting upon Massachusetts to comply with the Secretary's findings made in valid exercise of the authority delegated to him by Congress.

See *United States* v. *Sanitary District*, 266 U.S. 405, 425-426.

In view of the legal obligation of Massachusetts to obey the orders of the Secretary of War and in the face of the unequivocal expressions of the intention of Massachusetts to abide by the rulings of the Secretary, it is premature (as the Special Master said, Rep. Sp. M. 53) for Connecticut to urge (see Exceptions numbered 6 and 7, pp. 8-9) this Court to order Massachusetts not to do what she is bound not to do and what she has said that she has no intention of doing. Unless Massachusetts exhibits some inclination to disobey the Secretary's rulings, which have themselves the force of law, this Court, it is submitted, should assume that that Commonwealth will perform its full duty and obligations under the Constitution of the United States as it has done in the past.

D. The Findings of the Special Master, Not only Warranted, but Compelled by the Weight of the Evidence, Show that the Ware-Swift Project Will Cause No Material Injury to Present Connecticut Interests. Any Injury Suffered is De Minimis.

1. There is No Proof of Injury to Existing Interests of Navigation.

If, as Massachusetts contends is the case, the Special Master was correct in his determination (Rep. Sp. M.

13-17) that the finding of the Secretary of War is conclusive upon the issue of navigation, he then had no right or obligation to consider the issue of fact as to whether that finding was right. The Special Master, in order to clear up every possible issue in the case, did, however, pass upon the issue of fact of whether the Massachusetts project did affect unfavorably the interests of navigation upon the Connecticut River, and found that it did not. More specifically the Special Master found (Rep. Sp. M. 18) as follows:

> "The United States has aimed to maintain a channel of 10 feet over the numerous bars below Hartford. These have to be dredged out every year and the witnesses, who are shippers and masters of vessels in the trade, are in entire agreement in their story of difficulties at the lowest stages of water, when the depth on the bars at times falls even below 10 feet. This depth is considerably influenced also by the winds and tides as well as by the stage of water. There is no proof of difficulty in navigation at times when the stage of water is 12 feet or even 11 feet, 11 corresponding to an indication on the Hartford gauge of 3 feet. The discharge required from the Swift river reservoir during low water periods will somewhat benefit navigation. I cannot see how the diversion can injure navigation and therefore find that the proposed diversions will not interfere perceptibly or materially with the navigation of the Connecticut."

He also found (Rep. Sp. M. 5):

> "The total drainage area of both the Ware and Swift subject to diversion is 2.93 per cent of the total watershed of Connecticut river above Connecticut. Diversion of water to the extent authorized by the Secretary of War represents an average yearly subtraction from the flow of the Connecticut at the

> state line of about 2 per cent; but 94 per cent of this diversion occurs when the Hartford gauge reads above 3½ feet, which means 13½ feet depth of water. Two feet on the Hartford gauge indicates 10 feet of water, which is the depth the government heretofore has sought to maintain below Hartford. But a War Department project contemplates a future 12-foot channel and nearly all the diversion proposed will be when there is more than that depth of water."

That is, the 3½ feet on the Hartford gauge referred to in the foregoing quotation means 13½ feet depth of water in the channel when the War Department's project for the future channel depth is carried out and means 11½ feet of water in the channel even at the lesser depth which that Department seeks to maintain at present.

At page 19 of his report he put the situation as follows:

> "The maximum diversions are at high water and amount to from 5 to 6 inches, that is at periods of very high water the stage of the Connecticut may be reduced 5 to 6 inches, at medium stages less, and at very low stages its flow is increased."

The Connecticut exceptions numbered 2, 3, 4, 5, and 24 (Conn. Exc. pp. 5-7, 13-14) are to some extent at least based on the contention that these findings of the Special Master are not in accordance with the evidence. An examination of the evidence shows clearly that the Special Master was entirely correct in making the findings just quoted. To meet these Connecticut exceptions to the *facts* found, it is necessary to summarize the evidence at some length.

We have already pointed out that it appears clearly from the pleadings and the evidence that the Secretary of

War, upon the recommendation of the Chief of Engineers, *has* found that the diversions proposed by the Massachusetts legislation, with certain limitations set by his findings, will have no adverse effect upon navigation (Reprint of Answer, pp. 81-102; Transcript, p. 642). It also is clear that Massachusetts must and will adhere to, and comply with, the War Department limitations (Transcript, pp. 28, 29, 136, 137, 494; Joint Sum. p. 25).

The Connecticut River is accessible from the Atlantic Ocean and is navigated in interstate commerce with considerable regularity as far as Hartford (see Joint Sum. p. 37 *et seq.;* Transcript, pp. 665-668). Navigation for small craft above Hartford exists at certain seasons of the year (Transcript, p. 929; Joint Sum. p. 48), but no War Department project for navigation above Hartford has yet been adopted (Transcript, pp. 666-667; Joint Sum. p. 38). What water travel there now is between Hartford and Holyoke, Massachusetts, is almost entirely by pleasure boats (Transcript, pp. 667, 933; Joint Sum. pp. 38, 49).

Mean or average low water at Hartford occurs when the river level records 2 feet on the Hartford gauge (Transcript, pp. 678, 863, 914; Joint Sum. pp. 39, 45). Without dredging, the natural depth of the river over the bars at mean low water would be about 8 feet. All depths in excess of 8 feet are obtained by dredging (Joint Sum. p. 40; Transcript, p. 836), which is done entirely by the United States (Transcript, p. 837; Joint Sum. p. 40), and continues for several months each year (Transcript, p. 835; Joint Sum. p. 40). Dredging operations, however, do not begin until after the flood period, because of the fact that the floods and freshets fill up the bars (see Transcript, pp. 683, 846, 864, 927, 950).

No evidence of purely *intra*state commerce on the Connecticut River was presented (see Transcript, pp. 668-674, 843, 854, 911 *et seq.*, 923, 928). All commerce men-

tioned in evidence was interstate commerce, unless pleasure boating constitutes commerce.

The effect of tide is felt as far up the river beyond Hartford (Transcript, p. 254; Joint Sum. p. 27) as the Enfield dam, but not beyond (Transcript, p. 937). The tidal variation, which at Hartford is from 14 to 18 inches and at Saybrook (at the mouth of the river) is nearly 3 feet (Transcript, p. 841), totally disappears at Hartford when the Hartford gauge stands above 6 feet (Transcript, p. 1418, p. 254). [Enfield, Connecticut, where the Enfield dam is situated, is not to be confused with Enfield, Massachusetts, the site of the proposed Swift River Reservoir.]

Certain of the witnesses with navigating experience (see Joint Sum. p. 39 *et seq.*) on the river testified that during periods of comparatively low water the method of taking barges up the river is by working the tides; *i.e.*, a barge tow will leave Saybrook two and a half or three hours before high water in New London, go up the river as far as it can on the flood tide, and then wait for the next tide (Transcript, pp. 841, 851; Joint Sum. pp. 41, 43). These witnesses testified that they load their barges to meet the necessities of the particular river depth on each day, occasionally lightening the load as much as 300 tons below capacity in periods of low water (Joint Sum. p. 43; Transcript, p. 852). A full load apparently is carried only in freshet time (Transcript, p. 858). Tugs can be adjusted by letting out water ballast (Joint Sum. p. 44; Transcript, p. 856) so as to draw 9½ feet in the river and 11 to 12 feet outside in Long Island Sound (Transcript, p. 854; Joint Sum. p. 44). The tugs used in the river and in the sound are the same, and they haul the tows the whole trip from New York or New Jersey ports, where the barges are loaded, to Hartford (Joint Sum. p. 44; Transcript, pp. 854-855, 863). The load of the barges is based on the condition of the river as reported to the barge captain, at the point of loading, by the Hartford offices through the

New York office (Joint Sum. p. 44; Transcript, pp. 857, 863). One captain testified that he never received reports of changes of an inch or less in the reading of the Hartford gauge (Joint Sum. p. 44; Transcript, p. 858), and never made adjustments of ballast to such a fine point (Joint Sum. p. 44; Transcript, p. 856). Another witness testified that, although a very small amount of water more or less might make a difference when a barge was aground, he believed that very small variations were too "fine" to take into account (Joint Sum. p. 46; Transcript, p. 922). There was testimony to the effect that, when the gauge readings start to drop, the water level in the river drops very fast (Joint Sum. pp. 51, 52-53; Transcript, pp. 949, 955), so it is a fair inference that variations in flow of several inches make no difference in the depth to which barges are loaded, inasmuch as under natural conditions a very considerable change in river conditions could take place between the time the barges were loaded in New Jersey and the time when they reached Hartford.

Connecticut witnesses testified that the critical period of extreme low stages, apparently principally in September and October, is the period when water is most needed (Joint Sum. pp. 42, 44, 46, 47-48; Transcript, pp. 844, 862, 919, 926-927), and when additional water would be most useful. At such times frequently a northwest or westerly wind minimizes the beneficial effect of the tide (Joint Sum. pp. 42, 52; Transcript, pp. 844-845, 954). At the higher flows, navigation would not be embarrassed by a diminution in flow (Joint Sum. pp. 46, 47; Transcript, pp. 919, 921, 925; see p. 918), and the passenger boats at least would not be impeded if the river level were at all times (Joint Sum. p. 46; Transcript, p. 920) about 2 feet on the Hartford gauge. At such times the removal of an inch or two of water would make slight difference.

The very high freshet flows, besides making navigation difficult (Joint Sum. pp. 47, 51, 44; Transcript, pp. 926,

944, 949, 862), damage shore property (Joint Sum. p. 51; Transcript, p. 949) and fill up the bars, thereby removing the beneficial effects of dredging (Joint Sum. pp. 39, 42, 47-48, 51-52; Transcript, pp. 683, 846-847, 864, 926, 928, 949, 950). One witness for Connecticut testified that, because of the tendency of freshets to build up the bars (see, *e.g.*, Transcript, p. 950), navigators on the river would be glad to dispense with a good deal of water between March and May when they did not need it and did not want it. In the opinion of two Connecticut witnesses navigation would be benefited by a regulated flow (see, *e.g.*, Joint Sum. p. 48; Transcript, pp. 927, 1001).

Two other factors contribute to navigation difficulties on the river. The first of these is the noticeable decrease in the depth of the river caused at times of low flow by ponding of water over week-ends in the Enfield dam (in Connecticut), upstream from Hartford, and in other dams (Transcript, pp. 842, 917, 924, 957; Joint Sum. pp. 41, 46, 47). The other factor was mentioned by a Connecticut witness who testified that the barge traffic on the river had some tendency to delay and block passenger boats, and in his opinion that traffic was "getting to be more trouble than the low water" (Transcript, pp. 921, 923, 926; Joint Sum. pp. 46, 47).

From these facts, which appear through the disjointed and somewhat confusing testimony of a multitude of witnesses, we can get some picture of navigation on the river as it now is. Navigable depth is maintained only by dredging—a constant battle with the tendency of the floods and freshets to fill up the sand-bars. In flood times an embarrassingly large amount of water is available, and in periods of low flow barges cannot load to capacity, either because the water is already too low to carry a full load or because of the fear that the water in the river will drop between the time the barge is loaded in New York or New Jersey and the time it reaches the river. At high-flow seasons a diver-

sion or diminution in water will tend to be a benefit; in low-flow seasons an addition of water will tend to be a help. In seasons of moderate flow the diversion or addition of a hundred cubic feet per second one way or another will probably either be incapable of measurement (see Transcript, p. 641) or it will have no appreciable effect on barge loading, because of the fear that other causes—tide, wind, and ponding by mills, or sometimes even ponding alone—will cause even a greater drop in stream flow.

[This summary statement of the evidence on issue of navigation has been abbreviated as much as we believe is consistent with an adequate presentation of the case. A statement in greater detail will be found in the Massachusetts Brief before the Special Master at pages 47 to 61. Copies of the brief referred to, bound in green, are on file with the Clerk of this Honorable Court.]

The hydrograph, introduced in evidence by Massachusetts (Exhibit D-4), of which two sample years (Exhibit D-2 and D-3; see Joint Sum. p. 22; Transcript, p. 106 *et seq.*) were inserted in the Special Master's Report (opposite p. 19), shows how slight is the effect of the Massachusetts project in the critical periods of low flow. This hydrograph (Exhibit D-4) was testified by M. B. Jacobs, Connecticut's expert, to be substantially correct (Joint Sum. p. 27; Transcript, p. 252). The Special Master therefore was entitled to rely, as he evidently did, upon this graphic proof of the reasonableness of the Ware–Swift project. An examination of this hydrograph reveals clearly what Dr. Winsor testified (Joint Sum. p. 26; Transcript, p. 1416 *et seq.*)—that the great bulk of the diversion takes place during periods of high flow in the Connecticut River. This is also apparent from a Connecticut exhibit (Exhibit 25-B), which shows that on the average, during 9% of the time, the Hartford gauge at low tide stands at or below 1. At such times there would on the average be an

addition to the normal flow of 62 cubic feet per second by a release from storage in the Swift River under the War Department findings. The Hartford gauge (according to this exhibit) during 22% of the time on the average at low tide stands at 2 feet (*i.e.*, mean low water at Hartford). During such periods, when the Hartford gauge at low tide stands at 2 feet, the release from the Swift River Reservoir in addition to the normal flow of the river would on the average amount to 18 cubic feet each second. The gauge at low tide stands at 3 feet (which is 1 foot above mean or average low water at Hartford and 13 feet above project channel bottom) on the average 15% of the time. During this period, because no damage will result thereby to navigation, in the opinion of the Secretary of War, an average diversion of 125 cubic feet per second is permitted by the War Department. From this point on, the amount of average diversion increases with the increase in gauge reading. For instance, when the gauge stands at 4 feet, the average diversion is 180 cubic feet per second; when the gauge stands at 6 feet, 395 cubic feet per second; when at 12 feet, 1098 cubic feet per second. Thus, upon Connecticut's own evidence, the average effect of the Massachusetts project is to add some water to the natural flow of the Connecticut River at times when the Hartford gauge stands at mean or average low water or below it, *i.e.*, during what the Connecticut River mariners referred to as the critical periods. The bulk of the diversion takes place when the water is high and navigation will not be affected in any degree.

Of course average figures do not represent the condition which would be found on every occasion when the Hartford gauge stands at any particular level (Transcript, p. 638). Wind, tide, and ponding above Hartford may cause variations from the average condition. The flow on the Connecticut River as a whole may be high and

the Swift drainage area may be unusually dry, or *vice versa*. These possibilities account for variations from the normal situation under the War Department findings. The War Department findings were based upon the principle that a discharge of 4900 cubic feet per second in the Connecticut River at the Sunderland Gauging Station on the average corresponded to a Hartford gauge height at low tide of 2.1 feet and a discharge of 4650 cubic feet to a Hartford gauge height at low tide of 2.0, which is mean or average low water (Reprint of Answer, p. 99). A reading of 2.0 on the Hartford gauge is the water condition which represents the average navigable capacity. To maintain this condition on the average a flow of .58 cubic feet per second per square mile of drainage area is necessary (Joint Sum. p. 217; Transcript, p. 1435). It is this average flow per square mile which the War Department has required Massachusetts to guarantee (when the low tide at Hartford is at 2.0 or below) from the portion of the Swift River watershed above the proposed point of diversion, by assuring that the Swift River will always have 110 cubic feet per second flowing in it. [See Reprint of Answer, p. 100; 186 (square miles of Swift River drainage area above point of diversion) x .58 cubic feet per second = 107.88 cubic feet per second, which is less than the guaranteed flow required by the War Department.] The flow at Sunderland is merely a convenient method of determining when the flow of the river is so reduced that on the following day the Hartford gauge will on the average low tide read at 2.1 feet or lower. The Sunderland flow is thus in the nature of a signal to Massachusetts of the need of a release of water to maintain the average level of water at Hartford. Although the War Department principle is sound, departures from the average will occur because of varying local conditions in different parts of the watershed of the Connecticut River, and it is these departures from the average

which are reflected in days such as are shown on the third page of Exhibit C-41. In laying down a general rule the War Department could not heed the occasional unusual day, but necessarily based its conclusions upon average or representative conditions.

[The complainants introduced two deceptive and misleading exhibits (Exhibit C-5, Joint Sum. p. 27 *et seq.*; Transcript, p. 254 *et seq.*; esp. pp. 258-259; Exhibit C-9, Transcript, p. 286), which were based on the erroneous theory that the Massachusetts project involved the taking of water, not only from the Ware and Swift Rivers, but also from the Millers River, the Quaboag River, the Westfield River, and the Deerfield River. These two exhibits are drawn up *on a wholly unwarranted Connecticut theory* that the Massachusetts project involves a diversion four and three-quarters (4¾) times as large as the project *actually* authorized in 1926 and 1927 by the Massachusetts Legislature (Transcript, p. 259) and involving a diversion from a drainage area of 919 square miles in addition to the 284 square miles above the points of diversion on the Ware River and the Swift River. As shown on Exhibit C-5, even this imaginative, mythical diversion does not seem to have any very great effect on the flow of the Connecticut River at Hartford. Whatever might be the effect of such a project, it is not the Massachusetts project as set forth in the Massachusetts legislation, and still less as modified by the War Department findings.]

It is submitted that the findings of the Special Master as to the actual effect of the Massachusetts project upon navigation should be approved, and that there is upon all the evidence no merit in Connecticut's exceptions numbered 3, 4, and 24 (Conn. Exc. pp. 5-6, 13-14). Exception numbered 25 (Conn. Exc. p. 14) is discussed *infra* (Part II, this brief) together with the exceptions as to the law (Conn. Exc. Nos. 26-38; pp. 15-17).

2. *There will be No Injury to Connecticut because of Increased Pollution of the Connecticut River if the Massachusetts Project is Carried Out.*

(The evidence on this issue is summarized, Joint Sum. p. 85 *et seq.*)

The Special Master found (Rep. Sp. M. 28):

> "I think the plaintiff has failed to prove that the proposed diversion would perceptibly increase Connecticut river pollution, and consequently that there is no satisfactory proof of material pollution damage to the Connecticut to result from installing and operating the proposed Ware and Swift works."

The Connecticut exception numbered 54 (Conn. Exc. p. 24) apparently objects to this finding as unwarranted by the evidence, though the purpose or materiality of the exception is far from clear.

We think upon this branch of the case that the evidence of a Connecticut witness, Professor Winslow of Yale (whose testimony, uncontradicted, is quoted in the Special Master's Report, pp. 24-28), is conclusive proof that the finding of the Special Master was in all respects warranted. The evidence of all the other expert witnesses, called by both States, was to the same effect as Dr. Winslow's evidence—that the Massachusetts diversion as limited by the War Department findings could have no perceptible effect upon the pollution of the Connecticut River (see Transcript, pp. 475, 1396 *et seq.*, 1493 *et seq.*; Joint Sum. pp. 109, 126, 133 *et seq.*).

The various expert witnesses testified that the best measure of the state of a river with respect to pollution is what is known as its "population capacity." *Population capacity* is the capacity (expressed in terms of population) of the river to oxidize sewage and industrial wastes in addition to the load of sewage and industrial wastes actually

in the river at that point. For convenience this capacity to care for sewage and industrial wastes is expressed in terms of the number of persons whose sewage could be digested by the river at that point *in addition to* the pollution already in the river (Joint Sum. pp. 124, 130; Transcript, pp. 1391-1392, 1482). As Professor Phelps, a witness called by Massachusetts, put it (Joint Sum. p. 130; Transcript, p. 1482), the *population capacity* of a stream "represents in brief the reserve capacity of the stream to care for additional pollution over and above that which it now contains and to carry that pollution to the sea without the production of a resulting nuisance. . . ." *Population capacity*, he said, represents "the net balance over and above everything that is in the stream or that has happened to the stream by way of pollution in the past . . ." (Transcript, p. 1483; Joint Sum. p. 131).

Plaintiff's Exhibit C-20 (see Joint Sum. p. 105 *et seq.*) indicates that at the state line the total *equivalent population* (contributed by Massachusetts), which, of course, reflects industrial as well as human wastes, is 546,590. When the experts referred to *equivalent population* they meant the amount of waste, both human and industrial, contributed to the river above a given geographical point expressed in terms of population, assuming that an average human being produces a given amount of waste. [The total equivalent population above the state line, including New Hampshire and Vermont, Dr. Rudolfs said was 619,740 (Joint Sum. p. 105; Transcript, p. 451). The Vermont and New Hampshire pollution is so far upstream that by the time it reaches the Massachusetts–Connecticut state line it has all been oxidized (Joint Sum. p. 106; Transcript, p. 452). There is very little pollution from industry in New Hampshire or Vermont along the Connecticut River (Joint Sum. p. 106; Transcript, p. 452).] Defendant's Exhibit D-14 shows the *population capacity* above the Massachusetts–Connecticut state line from October,

1928, to November, 1929, inclusive. In every month but one during which there will be an actual diversion, the *population capacity* as shown thereon is more than twice the significant *equivalent population* above the state line as shown on Plaintiff's Exhibit C-20, and it is to be borne in mind that *population capacity* as expressed in Exhibit D-14 represents a surplus capacity at the state line over and above the present demand made by all wastes at that point. On Exhibit D-14 the lowest figure of population capacity during a month in which an average diversion is made is 649,000 for the month of July, 1929. Assuming that by a doubling of the Massachusetts population above the state line an additional 546,590 *population equivalent* was added, there would still be a *population capacity* of over 100,000 at the state line.

Exhibit D-14 also shows that in a dry month, such as August, 1929, the *population capacity* at the state line would have been increased or improved by 5000 as a result of the release of pure water from the Swift River Reservoir had the Massachusetts project been in existence at that time (Joint Sum. p. 132; Transcript, pp. 1484 *et seq.*). It appeared clearly from the evidence and the exhibits that at all times of extreme low flow, when the river appeared to be most closely approximating an objectionable condition, that, had the Massachusetts project been in effect at that particular time, the state of the river would have been better than it actually was because of the fact that, under the War Department findings, Massachusetts would have been required to release from the Swift River Reservoir more water than was actually flowing in the river at the time.

Mr. Robert Spurr Weston, an expert witness called by Massachusetts, explained that the dissolved oxygen in the river (and as a result the capacity of the river to dilute sewage) rapidly increases in quantity below the state line, and that at Rocky Hill, about 7 or 8 miles below the point

at which the Hartford sewage is emptied into the river, the population capacity of the river is much greater than it is at the state line. This increase in dissolved oxygen is due chiefly to re-aeration (*i.e.*, restoration of the dissolved oxygen content of the water through contact with the air), and it is undisputed that a heavily polluted stream will absorb more oxygen from the air by re-aeration than a slightly polluted stream. This improvement in the river just below the state line found by the Special Master to exist (Rep. Sp. M. 24) was admitted by the expert witnesses called by Connecticut (see, *e.g.*, Joint Sum. pp. 113, 114; Transcript, pp. 535, 548).

In view of this improvement of the river between the state line and a point below Hartford (despite the fact that the sewage of Hartford is turned into the river in the meantime), it can not be said that the river which is already far from being a nuisance at the state line will be rendered a nuisance by the Massachusetts project. It appears therefore from the evidence:

1. That although the Connecticut River at the state line is somewhat polluted, it is not now creating a nuisance at that point.

2. That if the Massachusetts diversion, as modified by the War Department findings, were in effect, there would not be any appreciable difference in the state of the river.

3. That the river still contains enough dissolved oxygen, even in exceedingly dry periods, to enable it successfully to dilute and carry away considerably more domestic and industrial waste than is now found in the stream at that point.

4. That at the most critical periods, in times of low flow, the state of the river would be better than it is now because of the releases of water from the Swift River Reservoir required under the War Department findings.

The Special Master was clearly correct in his finding that no damage would be done to Connecticut by the Mas-

sachusetts project because of any increase in pollution of the Connecticut River.

It should be pointed out here that the Special Master's finding (Rep. Sp. M. 53-54, questioned by Conn. Exc. No. 55, p. 24) as to the practice in Massachusetts and Connecticut, and in New England generally, with respect to the pollution of large streams was entirely warranted by the evidence. Attempts have been made in the past in both States to clean up highly polluted waters and to prevent future pollution (Joint Sum. pp. 142, 277 *et seq.*; Transcript, p. 980 *et seq.*). Progress, however, has been slow, as witnesses called by each State testified (see, *e.g.*, Joint Sum. pp. 148, 220, 270 *et seq.*; Transcript, pp. 995, 1605 *et seq.*), partly because of the obstacle of expense (Joint Sum. p. 222; Transcript, pp. 1615, 2080); partly because in some cases pollution has already gone so very far as to be hopeless (Joint Sum. pp. 148, 220 *et seq.*; Transcript, pp. 995, 1609); partly because some industrial wastes cannot be treated (Joint Sum. pp. 147, 221; Transcript, pp. 994, 995, 1612). Although, as the Special Master suggested, the condition of industrial streams in both States is now far from praiseworthy, it is a condition which has been allowed to exist by both. Some improvement may be in progress, and doubtless modern methods will bring a more rapid advance in the future. For the present, however, the situation is as the Special Master found it to be. Connecticut in this suit, which is not a suit to abate a pollution nuisance, cannot complain because Massachusetts has done to streams within her borders what Connecticut herself has permitted in her own rivers for generations. [See the cases cited *infra* as to the Connecticut law as to reasonable use of waters by riparian owners; *e.g.*, *Stamford Extract Mfg. Co.* v. *Stamford Rolling Mills Co.*, 101 Conn. 310.] Inasmuch as the particular act of Massachusetts complained of in this bill in equity has been found to have no tendency to increase the pollution of the

Connecticut River, it would seem to be immaterial that the river is already polluted in both States. The fact that the Special Master has found, and was warranted in finding, that the proposed diversions will not make the situation of the Connecticut River from the standpoint of pollution worse would seem to dispose of exceptions 54, 55, and 56.

3. Agriculture in Connecticut will not be Damaged in Measurable Degree by the Massachusetts Project.

The Special Master found (Rep. Sp. M. 20):

> "The lessening of spring floods will have its advantages and disadvantages. It will lessen some damages and increase others. On the whole I think the damage to the hay land is not shown to be of 'serious magnitude'; and that such damage, far from being 'established by clear and convincing evidence', is shown by no evidence making it possible of computation or proving that it is large."

The Connecticut contention was that the reduction in the height of spring floods because of the diversion under the Massachusetts project would affect adversely the fertility of lands subjected to inundation in these floods, particularly certain hay lands near the course of the Connecticut River within the State of Connecticut.

Exceptions Nos. 48, 49, and 50 substantially contend that the findings of the Special Master summarized in the passage just quoted above were not warranted by the evidence. In order to meet these exceptions, it is necessary to state to some extent the evidence introduced before the Special Master on the subject of the damage to agricultural lands in order that it may be clear that the Special Master had substantial evidence before him for consideration which would warrant him in finding as he did. [A full statement of this evidence would take an undue amount

of space. It was fully summarized in great detail by Massachusetts in a brief submitted to the Special Master at the close of the hearings before him. Copies of this printed brief (bound in green) are on file with the clerk of this Honorable Court and may be referred to for a statement of the evidence in detail. The pertinent material will be found at pages 75 through 80 of that brief.]

The Stipulation.

As the Special Master pointed out (Rep. Sp. M. 19), much of the evidence actually offered to sustain the allegations of damage with respect to the agricultural land was superseded by a stipulation entered upon the record (Joint Sum. pp. 75, 76; Transcript, pp. 888-890). From this stipulation it appears that an area of about 9500 acres of land in Connecticut is periodically covered by the annual freshets, and that these freshets enable the owners of this land to grow hay on such land without fertilizer. This hay when cured is either used to feed animals belonging to the owner of the hay field or it is sold in the spring following the harvest for approximately $26 a ton. Hay sold standing is worth from $10 to $15 an acre.

It is further agreed—

1. That without any flood water this hay land could not grow as large crops of hay without fertilization;

2. That any diminution in the floods would be a detriment to so much of the land as would not, because of such diminution, be flooded at all;

3. That the average spring freshet varies from about 17 to 25 feet above the low level (which is zero on the Hartford gauge, Transcript, p. 268) of the river;

4. That practically no crops other than hay are grown on any of the land which is regularly flooded.

The stipulation, taken alone, falls far short of showing that substantial damage results from a diminution in the

height of a flood flow of from 1 to 5 inches, which is the amount of diminution in river depth at Hartford which would result (during freshets over 16 feet on the Hartford gauge) from the diversions authorized by the Massachusetts legislation as modified by the War Department findings (Transcript, p. 263 *et seq.*; see Complainant's Exhibits C-6*a* and C-6*b*).

Some general evidence was offered through Connecticut farmers (see Joint Sum. p. 58 *et seq.*) tending to show that a diminution of flood flows would result in less land being flooded (see, *e.g.*, Joint Sum. p. 65; Transcript, pp. 766, 782), and in a diminution in the quality of the hay (see, *e.g.*, Joint Sum. p. 68; Transcript, pp. 800, 826). Dr. Morgan, Soil Expert of the Connecticut Agricultural Experiment Station, testified that the land actually covered by the flood water was highest near the river, sloping back gradually until it reaches a point where the land rises rapidly (Joint Sum. p. 77; Transcript, p. 894); that the area sloping back from the river is covered to a varying degree by different floods because of the conformation of the land (Joint Sum. p. 77; Transcript, p. 894); that a diminution of 3 inches in the stage of a normal flood would make a noticeable difference in the amount of land covered, but that a similar reduction in a very high flood would not make any significant difference, because the higher land rises very abruptly (see Joint Sum. p. 78; Transcript, p. 895); that, as a practical matter, no farmer would fertilize the portions of his hay field not touched by the floods (see Joint Sum. p. 78; Transcript, p. 896). No evidence was introduced by Connecticut which had any tendency to show precisely how much less land would be flooded by a flood reduced by the Massachusetts diversion.

The evidence as to the effect of the variation in the flood height upon the hay crop was unconvincing (see Joint Sum. p. 59; Transcript, pp. 748, 752) and indefinite (see,

e.g., Joint Sum. pp. 70, 71; Transcript, pp. 818, 826). Under cross-examination by counsel for Massachusetts each farmer who was asked the question testified that he cut a good crop of hay during the war years (see, *e.g.*, Joint Sum. pp. 68, 71; Transcript, pp. 795, 801, 820, 827, 828). It appears from Complainant's Exhibit C-6 that there were only four days in 1917 and four days in 1918 on which the Hartford gauge stood above 16 feet, as follows:

1917, March 29, 30, and 31; April 24: Highest point reached 18.3.
1918, April 3, 4, 5, 6: Highest point reached 18.8.

In these two years the flood season was shorter than in any years recorded upon the exhibit, and the flood did not reach, during these two years, a depth 2 feet above 17 feet on the Hartford gauge, which the stipulation (see Joint Sum. p. 76; Transcript, p. 890) describes as the minimum height of an average flood. Obviously, if the depth of the flood made any substantial difference in the fertility of the land covered, it would have been apparent in these years in which the floods were at a minimum. It is equally apparent that the variation of 8 feet in the height of the normal floods (see Joint Sum. p. 76; Transcript, p. 890) would have considerably more effect upon the quality of the hay crop in the flooded areas than a variation in the flood, due to the Massachusetts project, of from 1 *inch* to 6 *inches* (see Complainant's Exhibit 6).

The testimony of the farmers as to the height of flood flows did not appear to be based upon any very accurate information, but rather upon general impressions (see, *e.g.*, Joint Sum. p. 72; Transcript, p. 829), and it is apparent that other elements affect the hay crop fully as much as the depth of floods—as, for example, rainfall (see Joint Sum. pp. 68, 80; Transcript, pp. 800, 807; see p. 902). Farmers and local assessors who testified indicated

that the flooded area was much less valuable than the higher land back from the river (see, *e.g.*, Joint Sum. pp. 60, 68; Transcript, pp. 758, 803, 810). There was also testimony by Connecticut farmers that they began to raise the more valuable crops, such as vegetables and tobacco, at a point just beyond the flood line (Joint Sum. pp. 59, 69; Transcript, pp. 755, 822; see Stipulation, Joint Sum. p. 76).

There was considerable evidence of damage caused by high floods, particularly the 1927 flood (Joint Sum. pp. 61, 62, 64, 73; Transcript, pp. 763, 765, 779, 867). One witness testified that a low flood was worse than a high flood, because the high flows washed the debris away (Joint Sum. p. 59; Transcript, p. 751). There was also evidence that certain real-estate developments built on low land were badly damaged by flood flows (Joint Sum. p. 64; Transcript, pp. 779, 781), and the Mayor of Hartford, as the Special Master found (Rep. Sp. M. 20), testified to the large damage to that city from floods, as a result of which considerable expenditures are now being made for dikes and flood walls (Joint Sum. pp. 83-84; Transcript, pp. 1207 *et seq.*, 1229, 1230 *et seq.*). The testimony of Mayor Batterson is in itself a sufficient answer to exception numbered 47 (Conn. Exc. pp. 20-21) and shows that the Special Master's finding was warranted.

It is submitted, therefore, that the proof by Connecticut falls far short of showing by convincing evidence that floods are an unmixed blessing to Connecticut agriculture. There is evidence from witnesses offered by the complainant that the floods are a menace to the public welfare of the State to a marked degree. Upon the precise issue of the case, so far as it concerns agriculture, there is nothing more than the hazy guess of a number of local residents as to the probable effect of a diversion of flood flows lowering the river at Hartford from 1 to 6 inches (as shown by Exhibit C-6*b*)—or by 1 to 1½% (Joint Sum. p. 79; Transcript, p. 898—assuming a 3-inch variation due to diver-

sion). Since the extent to which any evil results of the Massachusetts project would be felt by Connecticut farmers is a matter of mere conjecture, and, inasmuch as the Special Master was warranted in his findings, exceptions Nos. 48, 49, and 50 (Conn. Exc. pp. 21-23) are without merit. The entire area specified in the stipulation as receiving any benefit at all from any floods is 9500 acres, or 14.84 square miles. There was no evidence to warrant a finding that any substantial portion of this area would not be flooded because of a slight reduction in the height of floods. It cannot be said that Connecticut has shown that the Massachusetts project will cause substantial damage to agriculture, sufficient to entitle her to injunctive relief against a sister State.

Comments on Particular Connecticut Exceptions as to Alleged Agricultural Damage.

Exceptions numbered 51 and 52 (Conn. Exc. p. 23) misstate what the Special Master found. His conclusion (Rep. Sp. M. 20) was that the "damage to hay land is not shown to be of 'serious magnitude' and . . . far from being 'established by clear and convincing evidence' is shown by no evidence making it possible of computation or proving that it is large." This is far from a holding [as suggested in exception No. 51] that it was incumbent on Connecticut to show the precise money damage suffered by particular property provided the damage was shown to be of serious magnitude (which it was not), and is, of course, in no sense a finding [as the complainant urges in exception No. 52] that the rights of the Connecticut farmers owning riparian land in the river valley are not "property." These exceptions and exception No. 53 (Conn. Exc. p. 23) are disposed of by the findings of fact of the Special Master under the rule laid down in cases like *North Dakota* v. *Minnesota*, 263 U.S. 365, 374 (see Rep. Sp. M. 7).

4. No Existing Connecticut Power Plant will be Affected by the Massachusetts Project. Complete Compensation for Any Injury to Potential Future Developments can be Made by the Payment of Money Damages.

There is no express allegation in Connecticut's bill that the diversion will in any way affect power interests in that State. Under general allegations of injury to persons and property in the Connecticut River Valley in Connecticut (see Bill, pars. 13, 16, 17-21, pp. 6-8, 9, 10, 11), the complainant was permitted to introduce evidence as to the effect of the Massachusetts project on Connecticut power. The Special Master found that "only one possible power development is shown" (that at King's Island, Rep. Sp. M. 20) and "that no present use of the waters for power purposes will be disturbed." He further found, in accordance with the undisputed evidence, that the only damage would be in the event of the construction of a projected 50,000 horse-power redevelopment at King's Island, just below the Connecticut–Massachusetts boundary. As to this redevelopment, he found that, although the proposed new dam at King's Island has been authorized by the Federal Power Commission, the "work so far as the testimony shows has not been resolved on by the company, and so far as shown the required capital has not been subscribed or arranged for." Giving effect to the limitations upon the Massachusetts project resulting from the War Department findings, the Special Master found that the proposed plant when erected would be damaged to the extent of $80,000. He reached this figure in the following manner (Rep. Sp. M. 21). Under the War Department findings, the actual loss of power "attributable to the diversion would amount to $7920 per year valuing each kilowatt hour lost at 6 mills; $7920 per year capitalized at 5 per cent is about $160,000." From this sum he deducted $80,000, which is the saving in capital investment resulting from the increase in extreme low stream flows of the Con-

necticut River brought about by the requirement of release of water in the War Department findings. The water so released in times of *low* flow will produce in excess of 1000 additional horse-power. This additional water would, therefore, result in an increase of that amount (1000 horse-power) in the *minimum* water power, upon which the power company could depend at all times, and a corresponding decrease in the size and capacity of auxiliary steam-power plant required to enable the power company to fulfill its contracts with its customers in times of *low* flow. The fair cost of auxiliary equipment capable of producing 1000 horse-power by steam would be about $80,000.

These findings of the Special Master were completely warranted by the evidence. The amount of damage to the proposed redevelopment due to loss of productive results in terms of kilowatt hours per year under the War Department restrictions was taken by the Special Master from the testimony of Connecticut's own experts (see Joint Sum. p. 56 *et seq.*; Transcript, pp. 374-375). Each kilowatt hour was valued by Connecticut at 6 mills, a figure which at least one Massachusetts witness testified was, in his opinion, high (see Joint Sum. p. 57; Transcript, p. 2024), inasmuch as most of the power loss would occur in times of high flow when the water could not be economically used. The power generated at such times would be surplus power and probably somewhat of a drug on the market because of the fact that other large power developments in the neighborhood would also have power for sale at such flood seasons. In giving a value of $80,000 to the increase in extreme low flows upon the Connecticut River with the corresponding decrease in the size and capacity of the auxiliary steam-power plant which the power company would require, the Special Master followed the testimony of an eminent electrical engineer, Mr. Weston Fuller, called by Massachusetts (Joint Sum. pp. 56, 57;

Transcript, p. 2023). As the Special Master states, there was no dispute of Mr. Fuller's testimony upon this point. It seems apparent that every interest, both of the State of Connecticut and of the power company, would be protected, therefore, if Massachusetts pays for the capitalized value of the actual reduction in kilowatt hours of power capable of being generated per year. The State will be compensated, because the power company situated within its borders will have the financial ability (furnished to it by Massachusetts in the form of damages) to generate just as much power with the aid of auxiliary steam plant as it could have developed before by water. The company will be made whole because it will have been paid as much by Massachusetts for the lost power as it could have possibly received from any customers. To a certain extent it will be in a better position, because it has in the form of additional water during low flows a more dependable minimum supply than it would have had without the execution of the Massachusetts project.

An Adequate Remedy at Law.

An adequate remedy at law is given under the law of Massachusetts to the Northern Connecticut Power Company and to any other persons damaged by the Massachusetts project, both by statute and by common law. The last paragraph of section 5 of chapter 375 of the Acts of 1926 (which act authorizes the Ware River diversion) provides as follows:

> "The owner of any real estate, whether within *or without* the commonwealth, which is not taken but is injured by the taking of the waters of Ware River under authority of this act or by the construction of the works incidental thereto, shall be entitled to damages therefor and may recover the same from the com-

> monwealth as in the case of a taking in accordance with the provisions of this act." [Italics ours.]

This quotation clearly shows that, as far as the Ware River taking is concerned, a proper remedy is provided for recovery of damages by the Northern Connecticut Power Company.

The language of sections 4 and 7 of chapter 321 of the Acts of 1927 (Reprint of Answer, pp. 55-57, 62), which authorizes the Swift River diversion, is broad enough to provide for recovery by any person whose property is injured either within or without the Commonwealth, and to authorize settlement of damage claims with any such persons.

Both the Ware and Swift River acts, with certain exceptions not here material, provide that the takings shall be in accordance with chapter 79 of the General Laws of Massachusetts (1921), dealing with the subject of eminent domain (Ware River: Mass. St. 1926, chapter 375, section 5; Swift River: Mass. St. 1927, chapter 321, section 4). Chapter 79 provides generally for a remedy to *any* person whose land is taken or injured, and is not restricted to persons or places within the Commonwealth. Indeed, the chapter specifically provides a remedy for the taking or injuring of land outside the Commonwealth. Section 11 of chapter 79 provides in part as follows:

> ". . . If land injured by a public improvement lies outside the commonwealth, the petition may be made to the board which would have jurisdiction if it lay in the same county or in the same town as such public improvement."

Section 14 of chapter 79 provides in part as follows:

> ". . . If the land injured lies outside the commonwealth, such petition shall be filed in the superior

court of the county in which the public improvement which caused the injury is situated."

All of the above sections taken together clearly indicate that a resident or non-resident of the Commonwealth owning land situated outside of the Commonwealth which suffers damage because of a public improvement within the Commonwealth is entitled to recover damages in an eminent domain proceeding for any injury to his property resulting from such public improvement. The Northern Connecticut Power Company is included within the scope of the statute and can present its claim for damages in the courts of Massachusetts, and will be accorded the same remedy and treatment as is accorded to residents of the Commonwealth claiming damage to land situated therein.

A Common Law Remedy.

In addition to such remedies as are contained in the above statutes, the common law of Massachusetts as set forth in the case of *Manville Company* v. *City of Worcester*, 138 Mass. 89, provides for a recovery in an action of tort by a non-resident for damages sustained to his property located outside the State caused by a diversion within the State of waters from an interstate stream. In this case the plaintiff was the owner of a mill in Rhode Island upon the Blackstone River and the defendant city had withdrawn in Massachusetts sufficient waters of a tributary of that river to affect materially the operation of the mill. The defendant asked for the following ruling of law: "The diversion of the waters of a natural stream in this State and preventing the same from coming to the plaintiff's mill situated in Rhode Island is not a tort for which the plaintiff can recover in the courts of this Commonwealth." The Court held that this ruling was refused rightly, and stated that the diversion by the City of Worcester entitled the plaintiff to recover in an action of tort. The

Court also held that no objection as to venue could be raised, and that the action was properly brought in Massachusetts. This case clearly holds that a person not a resident of Massachusetts, with property in another State injured by a diversion of waters from an interstate stream, may recover damages therefor in an action of tort even though there is no statutory provision providing such remedy.

The Power Company is Not Foreclosed from Further Relief.

We do not contend that, by the payment to the Northern Connecticut Power Company of the $80,000 damages which the Special Master has found it will suffer, the company is foreclosed from proceeding to collect under the Massachusetts statutes any further damage which it may feel that it has suffered. The power company is, of course, not a party to this proceeding and the only effect that the payment of $80,000 to it by Massachusetts would have would be as a payment *on account* of any damages which it might recover either by settlement with the Commission or by petition for the assessment of damages under the Massachusetts statutes.

The Northern Connecticut Power Company, therefore, has a complete and adequate remedy at law which should amply compensate it for whatever loss it may sustain. It is submitted that the conditional form of the decree suggested by the Special Master (Rep. Sp. M. 21, 54) is entirely proper. If this Court shall find that he was correct in his determination that the compensation at law for the injury to power in Connecticut is adequate, then the requirement that Massachusetts pay to the owners of the proposed power redevelopment the sum of $80,000 when that development is started is, from the standpoint of Massachusetts, entirely unobjectionable. Massachusetts,

in carrying out this project, has by its legislation declared its intention of paying for all injury, capable of ascertainment in accordance with established legal principles, which the project may cause. The fact that the injury will not be immediately suffered, should, under the principle of the cases cited by the Special Master (Rep. Sp. M. 21), be sufficient in and of itself to cause this Court to deny an injunction (*New York* v. *Illinois*, 274 U.S. 488; *New Jersey* v. *Sargent*, 269 U.S. 328, 338, 339). None the less it is equitable that Massachusetts should pay for an injury to a potential development at the time—in the future—when that injury is actually suffered, and the suggested condition in the recommended decree dismissing the bill seems a fair method of protecting the interests of all persons.

The Connecticut Exceptions as to Power.

It is submitted that the Connecticut exceptions numbered 39 and 40 (Conn. Exc. pp. 17-19) are disposed of by the evidence, to which reference has been made just above, for it is apparent that the findings of fact of the Special Master were strictly in accordance with the evidence. Exception numbered 41 does not contain a fair statement of the Special Master's action. He found that no damage would be caused to the present power plant at or near King's Island; he stated that only one power redevelopment was shown by the evidence to be possible on the Connecticut River in Connecticut; and he made express findings as to the amount of damage in dollars which would be caused by the Massachusetts project to that redevelopment if the redevelopment was ever carried out. The Special Master was not under any duty to find as suggested in exception numbered 41 and, although there is no indication that he refused to do so, it is hard to see how the exception is material.

Exceptions numbered 45 and 46 (Conn. Exc. p. 20) are disposed of conclusively by the finding that no damage is

caused to any present power development. These exceptions and exceptions numbered 42, 43, and 45 all are without merit because of the doctrine of law (see Rep. Sp. M. 7 *et seq.*; see *infra*, this brief, part III), referred to by the Special Master as the principle of "equality of right," applied by this Court in cases under its original jurisdiction involving the use of water of interstate streams by the *quasi*-sovereign States through which such streams flow. It seems clear that the decisions of this Court, in cases like *Kansas* v. *Colorado*, 206 U.S. 46, 97, *et seq.*, clearly establish the right of each riparian State to make a definite appropriation of an equitable division of the waters of an interstate stream. So long as Massachusetts has appropriated less than what is, under all the circumstances, an equitable division of the waters of the Connecticut River Valley (arising within the borders of Massachusetts), neither the State of Connecticut nor owners of property in Connecticut have any just basis for complaint about the Massachusetts project. In determining what constitutes an equitable division of such interstate waters, this Court gives attention to a comparison of the damage to a complainant State which would be caused by denying an injunction and that which would be caused to a defendant State by allowing an injunction (see, especially, *Kansas* v. *Colorado*, 206 U.S. 46, 100 *et seq.*).

If this is done in the case at bar, the damage to a future power development (which can be paid for fully in money) will be found to be trivial as compared with the damage to Massachusetts which would be caused by an injunction.

Two other principles of equity are applicable to this phase of the case. The first is the fundamental doctrine governing this case: The doctrine that this Court will not give one State relief in equity against another except for present damages of great magnitude clearly proved. Damages of $80,000 to a purely prospective project are not of great magnitude, particularly where money damages af-

ford full compensation. The second doctrine is the elementary equitable doctrine that, where money damages at law are entirely adequate, specific relief will be denied. The doctrine reinforces the principle that this Court will grant relief only where damage of serious magnitude is proved.

If Connecticut's exceptions numbered 42 to 46 (Conn. Exc. pp. 19-20) are based on the theory that she is protecting the interests of the Northern Connecticut Power Company, there is no merit in them, for it is well settled that this Court will not grant equitable relief to one State against another where the complainant State is suing purely on behalf of its individual inhabitants. The interest sought to be protected by the complainant State, must, of course, be an interest so general in its scope that its protection is a duty of the complainant State as *parens patriae*.

> See *North Dakota* v. *Minnesota*, 263 U.S. 365, at page 375 *et seq.*

It is submitted that no such damage to Connecticut power has been shown as would lead this Court to grant Connecticut any relief in equity.

5. Fish Life in the Connecticut River will Not be Affected by the Massachusetts Project.

The Special Master found (Rep. Sp. M. 22) "that the lowering of flood water resulting from proposed diversions is not shown to be materially injurious to the shad run." The Connecticut exception (Exc. No. 57, p. 26) taken to this finding was based upon the contention that the Special Master should also have found that there are a number of days in each summer when the river flow is so low that the pollution of the river at the state line is sufficiently great to make it likely that fish like shad would either migrate or die, and that any quantity of water taken out of the river

would be detrimental. It is submitted that any objection upon these grounds to the finding of the Special Master is immaterial in this case in view of the evidence which shows that, at all the periods when the river has been shown to be approaching a critical state from the standpoint of pollution, there would have been more water flowing in the river at the state line if the Massachusetts project had been in effect, than if the project had not been in effect. This evidence has been referred to adequately above in discussing the general subject of pollution. The evidence upon this point in detail was as follows (see Joint Sum. p. 151 *et seq.*):

Dr. Rudolfs, a witness for Connecticut, testified as to the pollution content of the river at the state line (Joint Sum. p. 108; Transcript, p. 470). He also testified that there was a great improvement in the state of the river between the state line and a point just above Hartford (Joint Sum. p. 115; Transcript, p. 548). Massachusetts expert witnesses testified (Joint Sum. pp. 132, 125; Transcript, p. 1490; see p. 1393) that the river was in a better state below Hartford (at Rocky Hill) than at the state line. It appears in evidence (Joint Sum. p. 153; Transcript, p. 966) that the shad never go above the Enfield dam, several miles below the state line. Dr. Rudolfs also testified (Joint Sum. p. 156; Transcript, p. 446) that the effect of pollution upon fish life depended upon the dissolved oxygen content of the water of the river (not upon the oxygen balance—Joint Sum. p. 156; Transcript, p. 447). He testified that the Connecticut River at the state line was just on the border line (Joint Sum. p. 156; Transcript, p. 470). It appeared that the Connecticut pollution tests took place during the summer and fall seasons of 1928 and 1929—periods of low flow (Transcript, pp. 418, 471) [*i.e.*, from June, 1928, to November, 1928, and from July, 1929, to September]. Dr. Rudolfs' conclusions were based, therefore, upon observations during the driest seasons of

the year, apparently comparatively unimportant from the standpoint of the shad which come into the river on the spring freshets. Not only were his observations during a more limited period than those of the Massachusetts experts (Joint Sum. p. 120 *et seq.*; see Transcript, pp. 730, 736, 738, 1387), but the Massachusetts analyses of the pollution state of the river at the state line revealed a larger dissolved oxygen content than was found by Dr. Rudolfs (see Joint Sum. pp. 124, 128; Transcript, pp. 1392, 1406, 1407, Exhibit D-8). The lowest dissolved oxygen content of the river at the state line found in any sample taken by Massachusetts was 3.75 parts per million gallons, equivalent to 44% oxygen saturation, found on September 8, 1929. The average content for the week (September 5-13, 1929, inclusive) was 4.70 parts per million or 53% saturation (Joint Sum. p. 130; Transcript, p. 1414). On September 8, 1929, under the War Department findings water would have been released from the Swift River Reservoir in excess of the natural flow in the Swift River at the point of diversion (Joint Sum. p. 130; Transcript, p. 1414, Exhibit C-12*a*); so the Massachusetts project, had it been in effect on that day, would have been an aid and benefit to the river at the state line rather than a detriment. Dr. Rudolfs testified that the amount of oxygen required for fish life (with special reference to shad) was a minimum of 3.5 to 4 parts per million, and that if the oxygen got below that amount, the fish began to migrate (Joint Sum. p. 102; Transcript, p. 435). According to Dr. Rudolfs' own figures the lowest weekly average oxygen content at the state line was 3.58 (Transcript, p. 448). During this week (August 25-31, 1929) the Massachusetts project, if in effect in accordance with the War Department findings, would have resulted in an increase in the natural flow of the Connecticut River at the state line. In view of the improvement in the river before it reaches Hartford, already referred to (Joint Sum. p. 115;

Transcript, p. 548), it is hard to see how, even upon Connecticut's own testimony, fish life is threatened by the Massachusetts project.

The Special Master was well warranted in finding as he did (Rep. Sp. M. 22, middle) that the evidence did not prove in any way that the number of shad caught varied directly with the height of the spring floods. Exhibits introduced both by the complainant (Exhibit C-29, C-30) and by the defendant (Exhibit C-29*a*) lead, as the Special Master said they do, to the inference that the variation in shad catch is due largely to other elements than the mere height of floods (as Connecticut endeavored to prove).

Massachusetts contends, therefore, that the Special Master was plainly correct in his determination that the Ware-Swift project as modified by the War Department findings would cause no ascertainable present damage to the State of Connecticut or its inhabitants, and further that the only future damage which might be caused by the project, that is, the damage to the proposed power redevelopment, could be paid for adequately by way of compensation in money.

II. The Action of the Secretary of War and the Chief of Engineers upon the Applications for the Approval of the Contemplated Diversions Constituted a Proper Performance of the Duties Delegated to Them by the Act of Congress of March 3, 1899. That Action, by Deciding that the Diversion is Not Objectionable (within the Limits Specified in the War Department Findings) so Far as Navigation is Concerned, Forecloses any Contention of Connecticut that the Diversion will Injure Navigation.

The argument of Massachusetts upon this branch of the case may be summarized as follows:

A. Congress under the Constitution has full power to authorize diversions such as those in the present case, and its determination with respect to such diversions is final.

B. Congress can properly delegate to the Secretary of War and to the Chief of Engineers this power to determine whether diversions such as those in the case at bar affect navigation. It has done so by the Act of March 3, 1899.

C. The Secretary of War, upon recommendation of the Chief of Engineers, has validly authorized the Ware and Swift River diversions with certain limitations and restrictions.

D. With reference to all questions as to the effect of the Massachusetts project upon navigation, the action of the Secretary of War is as conclusive and final as the action of Congress would have been, inasmuch as the Secretary acted in good faith and conformed to all statutory requirements and conditions.

A. Congress under the Constitution has Full Power to Authorize Diversions Such as Those in the Present Case, and Its Determination with Respect to Such Diversions is Final.

The power of Congress to control navigable waters is derived from article I, section 8, clause 3, of the Constitution of the United States, which confers upon Congress the right to regulate interstate and foreign commerce. This Court has said: "The right of the United States in the navigable waters within the several states is limited to the control thereof for the purpose of navigation."

Port of Seattle v. *Oregon Railroad Co.*, 255 U.S. 56, 63.

United States v. *Chandler-Dunbar Co.*, 229 U.S. 53, 62, *et seq.*

Massachusetts makes no contention that the power of Congress in navigable waters goes beyond the subject of navigation. Congress, by the Acts of September 19, 1890, and March 3, 1899, has assumed complete jurisdiction of everything pertaining to navigation.

> *Southern Pacific Co.* v. *Olympian Dredging Co.*, 260 U.S. 205, 207-208.
> *Sanitary District* v. *United States*, 266 U.S. 405, 425-426, 428-429.

Nothing is left to the States with respect to this power, for it is definitely settled by this Court that where Congress enters a field originally common to Federal and State law, and covers that field completely, all State action within that field is excluded (see Rep. Sp. M. 15).

> *Sherlock* v. *Alling*, 93 U.S. 99.
> *Chicago, R.I. & P. R. Co.* v. *Hardwick Farmers Elevator Co.*, 226 U.S. 426.
> *Missouri Pac. R. Co.* v. *Stroud*, 267 U.S. 404.

Not only are the States excluded from regulation within the field of navigation after Congress has spoken, but this Court has said that it will not revise a determination of fact by Congress within that field. If Congress makes a determination as to the effect of a given project or structure upon navigation, the Courts will not review or alter that determination.

In *Monongahela Bridge Co.* v. *United States*, 216 U.S. 177, at page 195, the Court said:

> "It is for Congress, under the Constitution, to regulate the right of navigation by all appropriate means, to declare what is necessary to be done in order to free navigation from obstruction, and to prescribe the way in which the question of obstruction shall be determined. Its action in the premises cannot be re-

vised or ignored by the courts or by juries except that when it provides for an investigation of the facts, upon notice and after hearing, before final action is taken, the courts can see to it that executive officers conform their action to the mode prescribed by Congress."

In *United States* v. *Chandler-Dunbar Co.*, 229 U.S. 53, at page 64, the Court said:

"So unfettered is this control of Congress over the navigable streams of the country that its judgment as to whether a construction in or over such a river is or is not an obstacle and a hindrance to navigation is conclusive. Such judgment and determination is the exercise of legislative power in respect of a subject wholly within its control."

These authorities conclusively establish that Congress has plenary power as to the regulation of navigation, and that its action in determining whether a given project constitutes an obstruction to navigation is final and non-reviewable.

B. Congress can Properly Delegate to the Secretary of War and to the Chief of Engineers this Power to Determine whether Diversions Such as Those in the Case at Bar Affect Navigation. It has Done so by the Act of March 3, 1899.

Sections 9 and 10 of the Act of March 3, 1899, 30 STAT. AT L. 1151 (U.S. Code, Tit. 33, §§ 401, 403), read as follows:

"SEC. 9. It shall not be lawful to construct or commence the construction of any bridge, dam, dike, or causeway over or in any port, roadstead, haven,

harbor, canal, navigable river, or other navigable water of the United States until the consent of Congress to the building of such structures shall have been obtained and until the plans for the same shall have been submitted to and approved by the Chief of Engineers and by the Secretary of War; *Provided*, That such structures may be built under authority of the legislature of a State across rivers and other waterways the navigable portions of which lie wholly within the limits of a single State, provided the location and plans thereof are submitted to and approved by the Chief of Engineers and by the Secretary of War before construction is commenced: *And provided further*, That when plans for any bridge or other structure have been approved by the Chief of Engineers and by the Secretary of War, it shall not be lawful to deviate from such plans either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Chief of Engineers and of the Secretary of War.

"SEC. 10. The creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is hereby prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of War; and it shall not be lawful to excavate or fill, or in any manner *to alter or modify* the course, location, condition, or *capacity of*, any port, roadstead, haven, harbor, canal, lake, harbor of refuge,

or inclosure within the limits of any breakwater, *or of the channel of any navigable water of the United States*, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of War prior to beginning the same." (Italics ours.)

The Wisconsin Case.

The precise nature of the authority and duty delegated by Congress in these sections was recently considered by this Honorable Court in—

Wisconsin v. *Illinois and Sanitary District*, 278 U.S. 367, 412-413—

where it was said:

"The policy carried out in the Act of March 3 1899, had been begun in the Act of September 19, 1890, c. 907; 26 Stat. 426, 454, 455. Sections 9 and 10 were the rearranged result of the provisions of Sections 7 and 10 of the Act of 1890. A new classification was made in Sections 9 and 10 of the Act of 1899, and substituted for Section 10 of the Act of 1890. The latter provided that the creation of any obstruction to navigable capacity was prohibited, unless 'affirmatively authorized by law' and this was changed so as to read 'affirmatively authorized by Congress.' The change in the words of the first clause of Section 10 was intended to make mere State authorization inadequate. *Sanitary District* v. *United States*, 266 U. S. 405, 429; *United States* v. *Bellingham Bay Boom Co.*, 176 U. S. 211. It was not intended to override the authority of the State to put its veto upon the placing of obstructing structures in navigable waters within a State and both State and Federal approval were made necessary in such case. *Cummings* v. *Chicago*, 188 U. S.

410. The words 'affirmatively authorized by Congress' should be construed in the light of the administrative exigencies which prompted the delegation of authority in the succeeding clauses. Congress, having stated in Section 9 as to what particular structures its specific consent should be required, intended to leave to the Secretary of War, acting on the recommendation of the Chief of Engineers, the determination of what should be approved and authorized in the classes of cases described in the second and third clauses of Section 10. If the section were construed to require a special authorization by Congress whenever in any aspect it might be considered that there was an obstruction to navigable capacity, none of the undertakings specifically provided for in the second and third clauses of Section 10 could safely be undertaken without a special authorization of Congress. *We do not think this was intended.* [Italics ours.] The Supreme Court of Maine in *Maine Water Co. v. Knickerbocker Steam Towage Co.*, 99 Me. 473, took the same general view in construction of the same section. It held that the broad words of the first clause of that section were not intended to limit the second and third clauses and that Congress's purpose was a direct prohibition of what was forbidden by them except when affirmatively approved by the Chief of Engineers and the Secretary of War. We concur in this view.

"The true intent of the Act of Congress was that unreasonable obstructions to navigation and navigable capacity were to be prohibited, and in the cases described in the second and third clauses of Section 10, the Secretary of War, acting on the recommendation of the Chief of Engineers, was authorized to determine what in the particular cases constituted an unreasonable obstruction."

Contemporary Construction of Section 10.

The Court (at p. 413) then adverts to and approves the contemporary construction of section 10 by the War Department, especially as revealed by the Opinion of the Acting Attorney General to the Secretary of War (February 13, 1925), 34 Op. Atty. Gen. 410, 416, where the Acting Attorney General says:

> "In my opinion Congress thus intended to delegate to the Chief of Engineers and the Secretary of War an administrative authority to determine a fact; and if they were of opinion that the use of navigable waters in a certain case was not such an impairment of their navigability as to require the prohibition of Congress, then the construction was 'affirmatively authorized by Congress,' because the administrative agency to which Congress had delegated the ascertainment of the facts had found the fact to be that such use was not for the time being an impairment of navigable capacity such as Congress intended to prohibit.
>
> "I am informed that for a long period of years it has been the practice of the War Department to issue permits under section 10 of the Act of March 3, 1899, without requiring that the particular project be first authorized by special Act of Congress, and that was the policy of the War Department in the specific case of the Sanitary District of Chicago."

The following language of the opinion in *Wisconsin* v. *Illinois and Sanitary District* shows that the Court clearly had in mind the precise nature of the determination of fact thus left by Congress to the Secretary of War and to the Chief of Engineers (at p. 414):

> "But it is said the construction thus favored would constitute it a delegation by Congress of legislative power and invalid. We do not think so. The deter-

mination of the amount that could be safely taken from the Lake is one that is shown by the evidence to be a peculiarly expert question. It is such a question as this that is naturally within the executive function that can be deputed by Congress. . . .

"The construction of Section 10 of the Act of March 3, 1899, was settled by this Court in the decision of the first Chicago Drainage Canal case in 266 U. S. 405, 429. The decision there reached and the decree entered can not be sustained, except on the theory that the Court decided first that Congress had exercised the power to prevent injury to the navigability of Lake Michigan and the other lakes and rivers in the Great Lakes watershed, and second that it could properly and validly confer the administrative function of passing on the issue of unlawful injury or otherwise on the Secretary of War, and that it had done so."

Summary of the Wisconsin Case:

Such is this Court's most recent construction of the power and duty confided to the Secretary of War and to the Chief of Engineers by section 10. Briefly, it may be summarized:

1. Congress, by section 10, has declared its decision that no unreasonable obstruction to navigable capacity shall be permitted unless Congress has affirmatively authorized it either directly or through the War Department.

2. Actual assent by Congress itself is necessary to projects covered by section 9. [In the case at bar it appears that the only dam or other storage reservoir to be constructed by Massachusetts as part of the project will be in the valley of the Swift River, which is in no sense a navigable water of the United States. The Connecticut River itself is not alleged to be navigable above Springfield (Bill, par. 6, p. 4). There is obviously no necessity of action by Congress itself under section 9 in order that

approval of the erection of a reservoir in the valley of the Swift River may be obtained.]

3. Congress, by section 10, has delegated to the Secretary of War and to the Chief of Engineers the duty of determining whether any other project [having the necessary or probable result of doing one of the acts mentioned in the second and third clauses of section 10] is reasonable or unreasonable so far as concerns the public interest in the maintenance of navigation for the protection of interstate and foreign commerce. A determination by the Secretary that a project is reasonable constitutes an affirmative authorization by Congress.

We submit that it cannot successfully be maintained that the authority given by the second and third clauses of section 10 to the Secretary of War and to the Chief of Engineers does not include the power to determine the propriety of diversions from non-navigable tributaries of navigable waters. The third clause of section 10 (see *supra*, pp. 78-79) reads, in part:

> "And it shall not be lawful . . . in any manner to alter or modify the . . . capacity . . . of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of War prior to beginning the same."

These words are broad and inclusive in meaning, and they have been liberally construed to include affecting by diversions the navigable capacity of a navigable water, as in the *Chicago Drainage Canal* cases (see 34 Op. Atty. Gen. 410, 416). It is obvious that a diversion from a non-navigable tributary of a navigable water may have fully as great an effect upon the navigable capacity of that water as a direct diversion from that water itself.

> *United States* v. *Rio Grande &c. Co.*, 174 U.S. 690, 708.

The purpose of Congress in making the prohibition contained in the first clause of section 10 would require the Secretary's authorization, not only of a direct diversion from a navigable water, but of an indirect diversion as well.

C. The Secretary of War, upon Recommendation of the Chief of Engineers, has Validly Authorized the Ware and Swift River Diversions with Certain Limitations and Restrictions.

The Secretary of War, in granting approval or authorization of any of the acts enumerated in section 10 (and a diversion has always been treated as being included within this section), need not find that the project before him will constitute an affirmative aid to navigation. If he does so find, obviously he may properly authorize the project. His power to authorize a project is equally clear in a case where he finds that, although the project does not aid navigation, it will do no injury to navigation. The Secretary should withhold his authorization only if the project in his opinion, after investigation and hearing, will unreasonably interfere with navigation or navigable capacity. His action, in a case where he finds that a contemplated project will not injure navigation, really constitutes a waiver of objections on the part of the Federal government.

The *motive* or *purpose* of the project under consideration is utterly immaterial. The only question before the Secretary of War is the effect upon navigation or navigable capacity. The Secretary may not authorize or refuse to authorize diversions on the ground that he approves or disapproves of the purposes or motives of the person engaging in such project. His duty is to examine the project carefully, and to prevent it only if he finds that it will constitute an unreasonable obstruction or injury to navigation. When the Secretary, under section

10, authorizes a project, the validity of his authorization does not depend upon the fact that the project will aid in irrigating arid lands, in carrying off sewage, or in supplying a community with water for domestic purposes, or upon the fact that it will produce beneficial results in any other respect. The validity of his determination is derived solely from the fact that he finds that no injury to navigation will result.

Certain of the complainant's exceptions, notably exceptions 26, 27, 32, and 33 (Conn. Exc. pp. 15-17), disregard entirely the fact that the purpose of section 10 is to prevent injury and obstruction to navigation, and to require every person or State about to engage in any of the enterprises described in the section (which may or may not affect navigation) first to obtain from the Secretary of War [for this purpose the duly constituted agent of the Congress of the United States] a determination that the project will have no adverse effect on navigation. It is submitted that these exceptions are disposed of by the argument which has just been made.

The Massachusetts Project is an Affirmative Aid to Navigation.

Even if this Court should hold that the Secretary of War has no power to authorize a project unless it constitutes an affirmative aid to navigation, the evidence in the case and the findings of the Special Master clearly show that the diversions as modified and limited by the Secretary's orders (which are binding upon Massachusetts) actually do constitute such an affirmative aid. On page 17 of his report the Special Master said:

> "Moreover it is to be noted that the works authorized are to a certain extent in direct aid of navigation. The testimony shows that the critical period of navigation is during extreme low water, and the Secre-

tary's permit is on condition that water be added to the stream during that period. The proof shows that from 1913 to 1929, inclusive, the Swift river reservoir, operated as required by the Secretary, would have increased the flow of the Connecticut 43.5 days during each year on the average, the number of days varying from 110 in 1913 to zero in 1922 and 1928, the last two being years of unusually high water."

On page 18 of his report the Special Master states further:

"The discharge required from the Swift river reservoir during low water periods will somewhat benefit navigation. I cannot see how the diversion can injure navigation and, therefore, find that the proposed diversions will not interfere perceptibly or materially with the navigation on the Connecticut."

This aspect of the case has been treated earlier in this brief at some length, and no useful purpose would be served by repeating that discussion.

Action of the Chief of Engineers and of the Secretary of War with Reference to Diversions of Ware and Swift Rivers.

The action of the Secretary of War and of the Chief of Engineers upon the applications made to the diversions here in issue is fully set out in pages 81 to 102 of reprint of the Massachusetts Answer.

The Ware River Finding.

As to the Ware River diversion, paragraphs 5 and 6 of the recommendation of the Chief of Engineers (Reprint of Answer, p. 86), approved by the Secretary of War on March 14, 1928, show that full hearings were given, and

that the State of Connecticut and others interested presented arguments in writing and orally, setting forth their objections to the project.

Paragraph 9 reads as follows:

> "9. The applicant is very desirous of a decision concerning the Ware River application as soon as possible. So far as the interests committed to this department are concerned, I see no reason for deferring action in the case. In my opinion the proposed diversion of waters in excess of 85,000,000 gallons per day (131 cubic feet) *will have no adverse effect on the navigable capacity of the Connecticut River.* In view of the controversy before the Supreme Court, it seems inadvisable to issue a formal permit for the present, but to inform the applicant that no objection will be imposed by the War Department to the diversion of the flood waters exceeding 85,000,000 gallons per day for the period October 15 to June 15 of each year. Approval of this course of action is recommended." (Italics ours.)

This action of the Secretary of War somewhat limited the diversion as authorized by the Massachusetts legislation, in that it prohibited any diversion whatever between June 15 and October 15, whereas the Massachusetts Legislature permitted diversions even between May 31 and December 1, provided the assent of the Massachusetts Department of Public Health was procured (Mass. St., 1926, c. 375, § 1).

The statement of the Secretary of War that no objection will be interposed by the War Department to the diversion of the flood waters exceeding 85 million gallons per day for the period October 15 to June 15 of each year constitutes an entirely valid action by the Secretary of War under section 10 of the Act of March 3, 1899. The statement that no formal permit should issue at the present time

because of the pending controversy before this Court in no way lessens the force or validity of the Secretary's finding. The procedure was in exact conformity with the statute. Application was made on November 30, 1927, by the Metropolitan District Water Supply Commission (Reprint of Answer, p. 81). Hearings were held and written and oral objections presented by Connecticut and other interested parties. After considerable study and investigation, the Chief of Engineers on March 6, 1928, made a report to the Secretary of War, which report contained definite recommendations as to the course of action to be pursued. The Secretary, on the 14th day of March, 1928, approved these recommendations. On March 19, 1928, the Commonwealth of Massachusetts was notified by the War Department of the action taken. The Special Master (Rep. Sp. M. 13, 14-17) ruled that the order was equivalent to consent by the Secretary to the diversions, and that the fact that it was negative in form does not in any way lessen or affect its conclusive force.

The finding of the Secretary, after a long and detailed study of a complicated engineering situation, should not be construed as an idle gesture or as a futile order in the nature of gratuitous advice. The only basis or justification for action by him in the premises is found in section 10, and the reasonable construction of his action and that of the Chief of Engineers is that they both intended to perform, and were performing, their functions and powers under that section. If the action of the Secretary and Chief of Engineers was not official action under section 10, then the carefully worked out limitations and modifications of the Massachusetts project would be meaningless and of no significance. The granting of a formal permit could add nothing to the force of the action of the Secretary, for the reason that his approval was a full exercise of his duty and power under this section. It follows, as the Special Master has stated, that the finding is as completely valid

and conclusive as if it had been in the form of an affirmative license (Rep. Sp. M. 13, 14-17).

The Swift River Finding.

As to the Swift River diversion, paragraph 11 of the recommendation of the Chief of Engineers (Reprint of Answer, pp. 98-100) states that the War Department is unwilling to admit that the appropriation of water from the Swift River to the extent *proposed in the application of Massachusetts* might not, on occasion, have an appreciable effect on the navigable capacity of the Connecticut River. The Chief of Engineers finds definitely, however, that the diversion will cause no substantial alteration or modification of the condition or navigable capacity of the navigable portion of the Connecticut River, if the flow of water in the Swift River *as authorized by the Massachusetts legislation* be augmented during the critical period from June 1 to November 30, in each year, in accordance with the provisions of his findings. [These conditions have been set out above in the general statement of the case.]

This recommendation, dated May 10, 1929, was approved by the Secretary of War on May 11, 1929. The application of the Metropolitan District Water Supply Commission was dated November 30, 1927. A considerable period of time thus elapsed between the application and the approval of the War Department. Paragraphs 6 and 7 of the recommendations of the Chief of Engineers (Reprint of Answer, pp. 96-97) indicate that the application was studied in great detail for seventeen months, and that full opportunity was given to the State of Connecticut and other interested parties to present objections. It is clear that the action of the Chief of Engineers and the Secretary upon the Swift River application has the same legal significance as their action upon the Ware River diversion. The contentions of Massachusetts, already made with reference to the Ware River, apply with equal

force to the action of the War Department on the Swift River.

Comments on Connecticut's Exceptions as to the Law on Navigation.

Several Connecticut exceptions require special comment. *Exception No. 26* (Conn. Exc. p. 15) is based upon a misconception of the purpose of section 10 of the Act of 1899. It is immaterial, in so far as the Secretary's duty is concerned, whether the water is diverted into another watershed or not. The only issue before him is whether or not an obstruction or injury to navigation will be created by the diversion proposed.

Exceptions Nos. 29, 30, 31, 33, 34, and 35 (Conn. Exc. pp. 15-17). These exceptions rest upon some theory that Massachusetts requires the permission, not only of the War Department, but also of Congress under sections 9 and 10 of the Act of March 3, 1899, before erecting a dam in the valley of the non-navigable Swift River, and that detailed plans of the physical structures involved in the Massachusetts project must be submitted to the War Department for approval. Such a contention, pushed to its logical conclusion, would require the consent of Congress [and an approval of all plans] before the smallest mill-dam could be built on the smallest stream, if that stream flowed eventually into a navigable river. The plain words of section 9 ("any . . . dam, dike . . . in any . . . *navigable river or other navigable water*") and of section 10 ("or other structure in any . . . navigable river, or other water of the United States outside established harbor lines") indicate beyond any doubt that Congress intended to regulate only the erection of structures actually placed in the *navigable* portions of *navigable* streams—and in no way intended to do what it has probably no constitutional power to do, *i.e.*, to regulate in detail the construction of works in non-navigable streams. If there were

any room for doubt as to the meaning of sections 9 and 10, we submit that this Court should adopt (as between a statutory construction which raises strong doubts as to the constitutionality of an act of Congress and another construction which renders the statute unquestionably valid) the construction which leaves no room for any holding or argument that the legislative department has exceeded its powers.

Richmond Screw Anchor Co. v. *United States*, 275 U.S. 331, 346.
Blodgett v. *Holden*, 275 U.S. 142, 148.

This Court has made it clear that section 9 would be construed to apply only to the specific structures therein mentioned.

Wisconsin v. *Illinois*, 278 U.S. 367, 412-413.

No structures in non-navigable streams are mentioned in section 9, so it is certain that no authorization by act of Congress is necessary before Massachusetts or any riparian owner can build a dam in the non-navigable Swift River. We submit that it is equally certain that the second clause of section 10 applies only to structures actually placed in navigable waters of the United States and that the section does not apply to any structure in a non-navigable stream, for it is, of course, true that the construction of a dam in a non-navigable stream in and of itself has no necessary effect upon the navigable capacity of any navigable water into which the non-navigable stream may flow. For that reason there is no basis for Congressional control of the *erection* of dams in *non*-navigable waters. The *use* of such dams in such a way as to create an obstruction to the navigable capacity of any navigable water of the United States is, of course, subject to the Congressional control, which has been delegated by section 10 to the Secretary of War and to the Chief of Engineers.

Paragraph 5 of the recommendations of the Chief of Engineers on the Swift River application, approved by the Secretary of War May 11, 1929 (Reprint of Answer, p. 96), reads:

> "5. No permit is required for any of the diversion structures, as the Swift River and its various branches, as well as Beaver Brook, are non-navigable streams. The jurisdiction of the War Department in cases of this kind begins when the appropriation or regulation of the waters of a non-navigable tributary is of such extent as 'to alter or modify the . . . condition or capacity of . . . the channel of any navigable water of the United States.' Since such alteration or modification, without previous recommendation and authorization of the Chief of Engineers and the Secretary of War, is unlawful, the War Department is interested in determining whether the amount of such appropriation or regulation would probably demand institution of Federal proceedings to preserve substantially the navigability of navigable waters."

It thus may be seen that the Secretary himself recognizes that no permit is required for the structures, either in the Swift or Ware Rivers.

D. With Reference to All Questions as to the Effect of the Massachusetts Project upon Navigation the Action of the Secretary of War is as Conclusive and Final as the Action of Congress would Have Been, inasmuch as the Secretary Acted in Good Faith and Conformed to All Statutory Requirements and Conditions.

So far as concerns the question of navigation, the action of the Secretary of War is as conclusive and final as that of Congress, provided the Secretary acts in good faith and conforms to all statutory requirements and conditions. In

Monongahela Bridge Co. v. *United States*, 216 U.S. 177, at page 195, the Court said:

> "It was not for the jury to weigh the evidence and determine according to *their* judgment, as to what the necessities of navigation required, or whether the bridge was an unreasonable obstruction. The jury might have differed from the Secretary. That was immaterial; for Congress intended by its legislation to give the same force and effect to the decision of the Secretary of War that would have been accorded to direct action by it on the subject."

The original report of the Special Master in the case of *Wisconsin* v. *Illinois* contains, on pages 161 to 165, a comprehensive review of the cases on this subject. The Special Master in that case (the present Chief Justice) stated, on page 164 of his report:

> "The question whether such an abstraction should be altogether prohibited, or the extent to which it should be permitted with regard to the interests of navigation, when and in what circumstances and in what amount a diversion of water from the lake would constitute an obstruction to navigation, are questions within the power of Congress to decide in the exercise of its control over navigable waters for the purposes of navigation. When these questions have been determined by Congress, *or under its authority validly conferred* [italics ours], they are not open to reconsideration by the Court."

The decision by this Court in the *Wisconsin* case in no way alters this rule. It is, of course, true that the Secretary may not authorize a project that will unreasonably obstruct or impair navigation. His duty, as stated by the Court, is to preserve, not to destroy, navigation; but as the report of Hon. *C. W. Bunn*, the Special Master in the case

at bar, points out (Rep. Sp. M. 15), the various "secretaries who granted the permits for diversion at *Chicago* never found that the diversion would not affect navigation," but "recognized that the diversion would damage navigation." The permits in the *Chicago* case were at most temporary, in view of pending litigation, and were, in part at least, caused by the action of Chicago in disregarding the terms of prior permits for diversions which would not have damaged navigation at the time when the permits for them were issued. This Court, in the *Chicago Drainage* case, 278 U.S. 367, held that the Secretary did not have the right to authorize or permit diversions of water *needed for navigation* merely for the purpose of carrying off the sewage of the City of Chicago, and, inasmuch as the Court found that the situation requiring the temporary permit was produced by the inequitable conduct of the Sanitary District, it ordered that District to put a stop to the situation which required the permit. It is submitted that the *Chicago Drainage* decision does not in any way weaken the contention that the determination of the Secretary of War to the effect that a given project will not hinder navigation is final and conclusive. The decision merely establishes the rule that the Secretary may not permit or authorize a diversion if he recognizes that it will cause a substantial impairment of navigation. It is to be noted that the Court does not attempt to review the Secretary's determination of the issue of fact properly before him but lays down the principle that he must not in any event authorize or permit a diversion which *admittedly* causes a substantial damage to navigation.

There is nothing in *Ford & Son* v. *Little Falls Co.*, 280 U.S. 369, which tends to contradict the contentions we have made. That decision, construing the analogous powers of the Federal Water Power Commission, turned entirely upon the construction of the different statutes there under consideration.

It is submitted that it is well settled that the decision of the War Department is fully as conclusive of the issue of obstruction or injury to navigation, when that decision is attacked collaterally, as in proceedings to which the United States is a party. [It should be remembered that in the case at bar this Court (279 U.S. 821) declined to join the Secretary of War as a defendant, and by that refusal refrained from reviewing the Secretary's determination directly.]

This is certainly true when the existence of an obstruction to navigation becomes of importance in litigation as between private parties.

> *Southern Pacific Co.* v. *Olympian Dredging Co.*, 260 U.S. 205, 207-208, 209-210, and cases cited.

We contend that no different rule applies when the determination of the War Department that no obstruction to navigation exists in any particular instance is raised in the course of litigation before this Honorable Court, within its original jurisdiction.

In *Kansas* v. *Colorado*, 206 U.S. 46, 85 *et seq.*, this Honorable Court, in considering the nature of its original jurisdiction as between States, took a distinction as between the method of determining issues over which the Federal government had controlling power and the method of determining other justiciable issues between the States as to which this Court as a *quasi*-international tribunal had final power. So far as the issues in the case were subject to national control, the Court intimated that the action, if any, of the Federal government within its proper constitutional sphere would be treated as of primary importance as governing the national phases of the situation.

> "Is the question one solely between the States or is the matter subject to national legislative regula-

tion, and, if the latter, to what extent has that regulation been carried? Clearly this controversy is one of a justiciable nature. The right to the flow of a stream was one recognized at common law, for a trespass upon which a cause of action existed.

"The primary question is, of course, of national control. For, if the Nation has a right to regulate the flow of the waters, we must inquire what it has done in the way of regulation. If it has done nothing the further question will then arise, what are the respective rights of the two States in the absence of national regulation? Congress has, by virtue of the grant to it of power to regulate commerce 'among the several States', extensive control over the highways, natural or artificial, upon which such commerce may be carried. It may prevent or remove obstructions in the natural waterways and preserve the navigability of those ways. In *United States* v. *Rio Grande Irrigation Company*, 174 U.S. 690, in which was considered the validity of the appropriation of the water of a stream by virtue of local legislation, so far as such appropriation affected the navigability of the stream, we said (p. 703):

"'Although this power of changing the common law rule as to streams within its dominion undoubtedly belongs to each State, yet two limitations must be recognized: First, that in the absence of specific authority from Congress a State cannot by its legislation destroy the right of the United States, as the owner of lands bordering on a stream, to the continued flow of its waters; so far at least as may be necessary for the beneficial uses of the Government property. Second, that it is limited by the superior power of the General Government to secure the uninterrupted navigability of all navigable streams within the limits of the United States.

"'In other words, the jurisdiction of the General Government over interstate commerce and its natural highways vests in that Government the right to take all needed measures to preserve the navigability of the navigable watercourses of the country even against any state action.'"

See also *Missouri* v. *Illinois*, 200 U.S. 496, 520.

We submit that the quoted reasoning in *Kansas* v. *Colorado* indicates that this Court, in the exercise of its original jurisdiction, would give effect to a determination by the appropriate department of the Federal government of an issue over which Congress had assumed to exercise the power delegated to it under the Constitution. In the case at bar, therefore, it would follow that the determination by Congress (through its properly created administrative agents in the War Department) that the proposed Ware and Swift diversions will not obstruct navigation should be regarded in this controversy as conclusive, so far as the issue of the effect of the diversions upon navigation is concerned.

Only the Navigability Issue is Concluded by the War Department Findings.

Massachusetts does not contend that this Court has not full jurisdiction to determine what the effect of the proposed diversions will be upon interests, other than interests of navigation, of the State of Connecticut and its citizens. Congress (and its administrative agents, the Secretary of War and the Chief of Engineers) has power to determine only what the effect of the proposed diversions will be upon navigation.

See *United States* v. *River Rouge Improvement Co.*, 269 U.S. 411, 419, and cases cited.

It by no means necessarily follows that a diversion which is innocuous so far as navigation is concerned may not cause damage to other important interests—*e.g.*, soil fertility, development of power, etc. We contend, however, that we have shown above that the Special Master was fully warranted in finding that the diversions contemplated will have no adverse effect upon any interest of the State of Connecticut either as a proprietor or as *parens patriae*, or upon the inhabitants of Connecticut.

III. The Special Master was Correct in Ruling that the Principle of "Equality of Right" Controlled the Use of the Connecticut River by the States through which it Flows. Massachusetts is Entitled to Make a Reasonable Use of the Waters of the Connecticut River, Including the Right to Appropriate Permanently an Equitable Portion of Its Waters.

Massachusetts contends that, under all the principles of law applicable to the case at bar, the use of the waters of the Ware and Swift Rivers proposed by it is altogether reasonable and proper. Where a stream flows through two States, two *quasi*-sovereigns have rights in that stream, to some extent absolute, to some extent qualified by the supreme Federal interest in the preservation of navigability, and to some extent modified by the equal rights of the other riparian State. It is submitted that each State is entitled to make a reasonable and equitable use of the benefits of the stream, not only by using the waters of the stream as they flow through its boundaries, but also by appropriating permanently a fair portion of the waters of the stream; provided always that the right of the other State to make a fair use of the stream and an appropriation of its equitable share of the waters of the stream is

not thereby impaired. The Special Master recognized this doctrine (Rep. Sp. M. 6-12) in his report.

Connecticut exceptions numbered 9 to 16, 21, and 22 [Conn. Exc. pp. 10-13] all contain some form of objection to the Special Master's rulings in this respect.

A. The Law Applicable to the Case at Bar is to be Determined by This Honorable Court in the Light of the Whole Situation of Fact; having Due Regard to the Decisions of this Court in Other Interstate Cases, to the Municipal Law in Force in Massachusetts and Connecticut, to Pertinent Provisions of International Law and Practices, and to the Customary Methods of Obtaining and Using Water in the Two States here Involved. No One of these Factors is All Important.

This Court has in past decisions indicated the basis upon which it will determine the principles of law applicable to a controversy such as this between two *quasi*-sovereign States. Apart from the issues of navigability, we submit that this Honorable Court should give some force and effect to each of the following factors:

1. Principles laid down by this Honorable Court in other interstate cases involving the use of interstate streams;

2. International and interstate practices and precedents as to the use of international and interstate streams;

3. The theory and the practical application of riparian and water law in the two contending States, particularly so far as domestic water supplies are concerned; as revealed not only by the decided cases, but also by the legislative policy of the States as expressed in general and special acts.

4. The necessity of expanding and developing the existing principle of international law giving a priority of right to make use of water for domestic purposes as compared to the use of the same water for other purposes.

The Right of a State to Sue as Parens Patriae.

It is not disputed by Massachusetts that Connecticut has a standing as *parens patriae* to raise for the determination of this Court issues (other than issues concerning navigability) with respect to the effect of the proposed Massachusetts diversions.

> *Kansas* v. *Colorado*, 185 U.S. 125, 141 *et seq.*; 206 U.S. 46, 80 *et seq.*
>
> *Missouri* v. *Illinois*, 180 U.S. 208, 241; 200 U.S. 496, 519.
>
> *New York* v. *New Jersey*, 256 U.S. 296, 302.
>
> *North Dakota* v. *Minnesota*, 263 U.S. 365, 372 *et seq.*
>
> *Wisconsin* v. *Illinois*, 278 U.S. 367, 409, and cases cited.

This Court not only has not consistently applied the law of any particular jurisdiction to interstate controversies involving the use of water of interstate streams, but it has studiously avoided tying its hands for the future by more than a determination of the guiding principle applicable to the case before it upon the particular facts actually before it for consideration. The doctrine of the decisions is perhaps best expressed in the language of Mr. Chief Justice *Fuller* in *Kansas* v. *Colorado*, 185 U.S. 125, at pages 146 and 147:

> "Sitting, as it were, as an international, as well as a domestic tribunal, we apply Federal law, state law, and international law, as the exigencies of the particular case may demand, and we are unwilling, in this case, to proceed on the mere technical admissions made by the demurrer."

This Court has recognized that an interstate controversy of this nature "rises . . . above a mere question of local

private right and involves a matter of state interest, and must be considered from that standpoint" (Mr. Justice *Brewer* in *Kansas* v. *Colorado*, 206 U.S. 46, at 99). In the case last cited the Court goes on, at page 100, to discuss the situation before it as it would be *if involving solely individual riparian proprietors.* In that case the Court said:

> "The question would be one of legal right, narrowed to place, amount of flow and freedom from pollution.
>
> "We do not intimate that entirely different considerations obtain in a controversy between two States. Colorado could not be upheld in appropriating the entire flow of the Arkansas River, on the ground that it is willing to give, and does give, to Kansas something else which may be considered of equal value. That would be equivalent to this court's making a contract between the two States, and that it is not authorized to do. But we are justified in looking at the question not narrowly and solely as to the amount of the flow in the channel of the Arkansas River, inquiring merely whether any portion thereof is appropriated by Colorado, but we may properly consider what, in case a portion of that flow is appropriated by Colorado, are the effects of such appropriation upon Kansas territory."

This language, together with other language found at pages 96-97 of the same opinion, shows the breadth of view taken by this Court when deciding important interstate disputes, which, in the case of completely independent sovereign States, would be settled either by diplomacy or by resort to war. It is, of course, true that the law of the States involved is one of the elements given consideration by this Court in such disputes.

See, *e.g.*, *Wyoming* v. *Colorado*, 259 U.S. 419, 458, 464 *et seq.*
Kansas v. *Colorado*, 206 U.S. 46, 94.

There is ample authority to the effect that the local law in force in either State is not conclusive, when this Court is acting in its *quasi*-international capacity.

See, *e.g.*, Mr. Justice *Holmes* in *Missouri* v. *Illinois*, 200 U.S. 496, 519-520:

> "The Constitution extends the judicial power of the United States to controversies between two or more States and between a State and citizens of another State, and gives this court original jurisdiction in cases in which a State shall be a party. Therefore, if one State raises a controversy with another, this court must determine whether there is any principle of law and, if any, what, on which the plaintiff can recover. But the fact that this court must decide does not mean, of course, that it takes the place of a legislature. Some principles it must have power to declare. For instance, when a dispute arises about boundaries, this court must determine the line, and in doing so must be governed by rules explicitly or implicitly recognized. *Rhode Island* v. *Massachusetts*, 12 Pet. 657, 737. It must follow and apply those rules, even if legislation of one or both of the States seems to stand in the way. ***But the words of the Constitution would be a narrow ground upon which to construct and apply to the relations between States the same system of municipal law in all its details which would be applied between individuals.*** If we suppose a case which did not fall within the power of Congress to regulate, the result of a declaration of rights by this court would be the establishment of a rule which would be irrevocable by any power except that of this court to reverse its own decision, an amendment of the Constitution, or possibly an agreement between the States sanctioned by the legislature of the United States." (Italics ours.)

Municipal law enters into international law as one of the elements or standards by which the obligation of a sovereign to do equity to another sovereign is measured.

See, *e.g.*, *Kansas* v. *Colorado*, 206 U.S. 46, 102-105.
Wyoming v. *Colorado*, 259 U.S. 419, 466-467.

It is not, we submit, the only element which will be considered by this Court. In the past this Court has said that it will consider precedents, treaties, and other authorities in international law.

Kansas v. *Colorado*, 185 U.S. 125, 146-147.

The Application of International Law.

It has applied a modified form of international law in interstate controversies—

Missouri v. *Illinois*, 200 U.S. 496, 518-522;
Alabama v. *Georgia*, 23 How. 505, 513;
Nebraska v. *Iowa*, 143 U.S. 359, 361-368 (in which international law authorities were treated as decisive of the case);
Louisiana v. *Mississippi*, 202 U.S. 1, 25, 49-52;
See *Arkansas* v. *Tennessee*, 246 U.S. 158, 172-174—

except, of course, where, under the Constitution of the United States, Federal law is supreme.

See, *e.g.*, *Wisconsin* v. *Illinois*, 278 U.S. 367 (navigation).
Pennsylvania v. *West Virginia*, 262 U.S. 553, 595 *et seq.* (interstate commerce).

Broader principles than the municipal riparian law of Connecticut and of Massachusetts are therefore applicable to this cause. This is a controversy between *quasi*-sov-

ereign States. To a very great extent the issues in this case are *quasi*-international, and the rights of the parties are fixed by international law. The late Chief Justice of this Honorable Court, in a discussion of a proposed world court some years ago, phrased this principle as follows:

> "A court to administer international justice is not new. Our own Supreme Court is one. Questions arise between states not settled by the Federal Constitution or Federal statutes. In the Kansas-Colorado case, Congress had no power to control Colorado. International law alone fixed the rights between the states and the Supreme Court enforced these rights."
>
> *Hon. William H. Taft*, "Papers on the League of Nations," p. 99.

The issue in the case at bar, we submit, calls for the application of international law principles of the same sort as those which controlled the decision of the International Commission which approved the application of the City of Winnipeg for permission to divert water from a tributary of the Lake of the Woods, an *international* water like the Connecticut River (see *infra*, this brief, part III C).

This Court also has given great weight to commercial and economic practices with respect to matters similar to those in issue in the territory affected by the particular controversy.

See, *e.g.*, *Missouri* v. *Illinois*, 200 U.S. 496, 521-522.
Kansas v. *Colorado*, 206 U.S. 46, 101, 105 *et seq.*
Wyoming v. *Colorado*, 259 U.S. 419, 466 *et seq.*

Compare the consideration given to the practical situation in the light of the best scientific knowledge available, in *New York* v. *New Jersey*, 256 U.S. 296, 309 *et seq.*

The willingness of this Honorable Court to examine not only the technical rules of law in force in each State, but also the prevailing practice as to the use of streams in the community, is pointed out by Mr. Justice *Holmes* in *Missouri* v. *Illinois*, *supra*, at pages 521-522:

> "As to the principle to be laid down the caution necessary is manifest. It is a question of the first magnitude whether the destiny of the great rivers is to be the sewers of the cities along their banks or to be protected against everything which threatens their purity. To decide the whole matter at one blow by an irrevocable fiat would be at least premature. If we are to judge by what the plaintiff itself permits, the discharge of sewage into the Mississippi by cities and towns is to be expected . . . These are facts to be considered. Even in cases between individuals some consideration is given to the practical course of events. In the black country of England parties would not be expected to stand upon extreme rights. *St. Helen's Smelting Co.* v. *Tipping*, 11 H.L.C. 642. See *Boston Ferrule Co.* v. *Hills*, 159 Massachusetts, 147, 150. Where, as here, the plaintiff has sovereign powers and deliberately permits discharges similar to those of which it complains, it not only offers a standard to which the defendant has the right to appeal, but, as some of those discharges are above the intake of St. Louis, it warrants the defendant in demanding the strictest proof that the plaintiff's own conduct does not produce the result . . ."

It is submitted, therefore, upon the authorities cited, that it is clear that the municipal law of the two States is not the only basis of legal principle upon which this cause will be decided; and that the Court will give due regard to the economic requirements of the two States involved; and

to principles, established by this Court and by international law, of equitable division of the benefits of the waters of interstate and international rivers as between States.

B. The Decisions of This Court Establish the Principle of the Equitable Division of the Benefits Arising from an Interstate River among the States through which the River Passes. This Doctrine, Referred to by the Special Master as the Rule of "Equality of Right," is Applicable to the Case at Bar, Provided that Connecticut had Proved Damage or Injury of Serious Magnitude.

Massachusetts contends that this Honorable Court has consistently recognized that a *quasi*-sovereign State may make use of its fair share of the benefits accruing from the presence of a portion of an interstate river within its borders. That use must be reasonable in the light of local conditions of terrain, geography, and rainfall. It must have due regard to commercial and business custom in the community as to the use of water. It is influenced in part by local municipal law. None the less, we submit that this Court has uniformly, in the exercise of its interstate jurisdiction, laid down a principle that under all the circumstances each State bordering upon an interstate stream is entitled to make what is substantially a permanent abstraction of a portion of the waters or of the beneficial use of the stream, providing the abstraction does not exceed the amount to which the State, as a *quasi*-sovereign, is entitled by international law as its share under an equitable division of the waters of the stream. Chronologically, the principal decisions are as follows:

Missouri v. *Illinois.*

Missouri v. *Illinois*, 180 U.S. 208 (1901). This was a bill in equity seeking to enjoin the discharge of Chicago's

sewage into the Mississippi River by means of the Sanitary Canal. Demurrers were overruled and leave was given to file answers to the bill. In 200 U.S. 496 (1906), the Court considered the testimony taken as to the effect of the Illinois project, which in substance was a permanent appropriation by Illinois of a portion of the potential beneficial use of the Mississippi watershed for the purpose of sewage dilution. The Court first determined that there was no superior Federal right (*e.g.*, navigation) involved (at pp. 518-520). It then determined that the Court must under the Constitution decide whether the conduct of Illinois was a proper exercise of sovereign right, which did not impinge on the equal sovereign rights of Missouri. The Court, relying on the common practice of making use of the Mississippi and its tributaries for sewerage purposes, judged Missouri by the standards she employed within her own borders (at pp. 521-522) and found that the evidence did not clearly establish the commission of a nuisance by Illinois (at pp. 523-526). The Court decided that the alleged injury was not sufficiently serious to justify equitable relief against a sovereign State (at pp. 520-521).

The decision was in substance a holding by this Court that Illinois had not made use of the stream in excess of its equitable share of the beneficial use of the waters. The case, when analyzed, involves an application of the principle of equitable division of beneficial user.

Kansas v. *Colorado.*

Kansas v. *Colorado*, 185 U.S. 125 (1901); 206 U.S. 46 (1907). This was a bill in equity brought by Kansas to enjoin the permanent diversion of water from the Arkansas river by Colorado for the purpose of irrigation. In overruling a demurrer the Court declined to "proceed on the mere technical admissions made by the demurrer" to a final decision, before considering the case upon its merits,

in view of the fact that the applicable law depended upon the "exigencies of the particular case" (at p. 147).

After the taking of testimony, this Court considered the case upon its merits (206 U.S. 46). The decision affirmed the jurisdiction of the Court to treat the controversy as rising "above a mere question of local private right" and as "a matter of state interest" (at p. 99), which must be determined upon a broad consideration of all the geographical, natural, and economic circumstances. The following language (at p. 97) indicates that the Court believed that it was bound to apply in accordance with international law, the doctrine of "equality of right":

> "As Congress cannot make compacts between the States, as it cannot, in respect to certain matters, by legislation compel their separate action, disputes between them must be settled either by force or else by appeal to tribunals empowered to determine the right and wrong thereof. Force under our system of Government is eliminated. The clear language of the Constitution vests in this court the power to settle those disputes. . . . Nor is our jurisdiction ousted, even if, because Kansas and Colorado are States sovereign and independent in local matters, the relations between them depend in any respect upon principles of international law. *International law is no alien in this tribunal.*
>
> * * * * * * * *
>
> "One cardinal rule, underlying all the relations of the States to each other, is that of *equality of right.* Each State stands on the same level with all the rest. It can impose its own legislation on no one of the others, and is bound to yield its own views to none. Yet, whenever, as in the case of *Missouri* v. *Illinois,* 180 U.S. 208, the action of one State reaches through the agency of natural laws into the territory of an-

other State, the question of the extent and the limitations of the rights of the two States becomes a matter of justiciable dispute between them, and this court is called upon to settle that dispute in such a way as will recognize *the equal rights of both* and at the same time establish justice between them. In other words, through these successive disputes and decisions this court is practically building up what may not improperly be called *interstate common law*. . . . Surely here is a dispute of a justiciable nature which must and ought to be tried and determined. If the two States were absolutely independent nations it would be settled by treaty or by force. Neither of these ways being practicable, it must be settled by decision of this court." (Italics ours.)

The Doctrine of Equitable Division Applied.

In view of the fact that "Kansas . . . recognizes the right of appropriating the waters of a stream for the purposes of irrigation, subject to the condition of an *equitable* division between the riparian proprietors" (at p. 104), the Court denied specific relief inasmuch as the evidence failed to show that under all the applicable circumstances Colorado had permanently taken more than her fair share of the waters of the river or had done any act which worked substantial detriment to the States lower on the river (at p. 117). The Court, however, in reaching its conclusions, did not even purport to apply "the extreme rule of the common law" (at p. 103), but based its decision upon a consideration of (at p. 100) "the effect of what has been done upon the conditions in the respective States," and so adjusted "the dispute upon the basis of equality of rights as to secure as far as possible to Colorado the benefits of irrigation without depriving Kansas of the like beneficial effects of a flowing stream." Clearly, the decision was

based upon the international law principle of equitable division of the benefits of a flowing stream as between the States having an interest in the stream. Upon no other basis can be explained the action of the Court (at pp. 113-114) in weighing the benefit to Colorado and the amount of detriment to Kansas caused by the diversion there in question. Similar language appears at page 117, where the Court clearly points out that its guiding principle is "an equitable division of benefit" of the waters of the Arkansas as between the two States.

The Special Master in the case at bar (Rep. Sp. M. 8-9) construed the decision in *Kansas* v. *Colorado* in accordance with this view, stating that in his judgment the opinion laid down as "the cardinal rule as between States . . . equality of right, saying that the question should be viewed not narrowly and solely as to the amount of flow in the Arkansas river, inquiring merely whether any portion thereof was appropriated by Colorado, but rather to determine how much Colorado might fairly appropriate under the rule of equality and the effect of such appropriation upon the lower state. The court awarded to the upper state the use of a very large share of the water. In reaching this conclusion the court adopted its own rule of international law. In each international case as it arises, I think the Supreme Court will adopt that rule of law which best works out equality and equity in the particular case. The result reached in *Kansas* v. *Colorado* it seems to me would not have been different whether Kansas recognized to a certain extent appropriation rights in water or not."

Wyoming v. *Colorado.*

Wyoming v. *Colorado*, 259 U.S. 419 (1922), was a case involving a diversion by Colorado of certain of the upper waters of the Laramie River, which flows from Colorado into Wyoming. The latter State sought an injunction of such diversions in Colorado as were subsequent in time to

certain Wyoming diversions and as constituted an inequitable use of the waters of the stream. The whole geographical and economic situation was brought to the Court's attention, as well as both international and local precedents in similar cases (see esp. pp. 425-427, 431, 434-438). The Court examined at length the whole situation of fact in the light of the history of the area affected by the controversy; it considered the uses to which water had been put in the two States both in pioneer days and after their admission as States; it considered the system of water law under which settlers in both States had turned arid desert into fertile agricultural land. From this examination the Court came to the conclusion that in the particular case equitable division of use between the contesting States should be obtained by adopting the "doctrine of appropriation as . . . the only basis which is consonant with the principles of right and equity applicable to such a controversy," in the light of the whole background of the case. The Court examined each of the claimed appropriations in each State, classified them as to priority, and by its decree permitted Colorado to continue only so much of the diversions sought to be enjoined as could be held to be proper and reasonable in view of the principle which in the particular case was deemed to result in an equitable division of the beneficial user of the stream as between the two States.

The Special Master (Rep. Sp. M. 11) applied this doctrine of the *Wyoming* case to the case at bar in the following language:

> "In that case to secure equality of right the court permitted Colorado to divert for irrigation in another watershed. I see no reason why the same principle should not apply here, provided only the diversion of water is reasonable and no more than consistent with Connecticut's equality of right. If Massachusetts would have a right to abstract this much water under

any system of law she might follow and for any use legal by that system. I cannot see that Connecticut has a better right merely because she and Massachusetts adopted the common law of England."

North Dakota v. *Minnesota*, 263 U.S. 365 (1923), which involved the use by Minnesota of waters lying within its borders in such a way as to affect to some degree the amount of water in a watercourse bordering upon both States, was in substance a decision that Minnesota had not in fact caused any damage of great magnitude to North Dakota. Certainly Minnesota had not taken more than her fair and equitable share of the potential beneficial use of the waters and watercourses of an interstate watershed. Similarly in *New York* v. *New Jersey*, 256 U.S. 296, there is perhaps a holding *sub silentio* to the effect that the defendant State in that case had not been shown to have appropriated more than its equitable share of the sewage dilution capacity of Upper New York Bay, an interstate water.

The Drainage Canal Case.

Wisconsin v. *Illinois*, 278 U.S. 367 (1929), involved largely the decision of questions based on an application of Federal law governing the control of navigable waters. Upon the facts and the report of the Special Master the Court found that the diversions by Chicago were not proper, largely because they were in excess of the water which could be taken without injury to the navigable capacity of the lakes. This fact alone made it so clear that Illinois was taking more water than it had any just claim to, either under any principle of equitable division or under the Federal law applicable to navigable waters, that the doctrine of equality of right was not considered at length by this Court (see pp. 417-419). The case, however, casts no doubt upon the validity of the principle of equitable

division of the beneficial user of interstate waters as between interested States, in any case where no superior Federal right, such as navigation, is injured.

The Final Decree in the Chicago Drainage Canal Case Recognizes the Prior Claim of Water Supply.

The second report of the Special Master in the *Chicago* case, and the final opinion of this Court (281 U.S. 179, 196, 201) cast no doubt upon the equity of Chicago's claim to divert sufficient water from the lakes for domestic uses of drinking, washing, and the like. By the terms of the final decree (281 U.S. 201, 696, 697; see also Report of the Special Master on Re-reference, pp. 120, 143, and 147 *et seq.*), the diversion requirements of the domestic water supply of Chicago are to be met as a claim upon the waters of the lakes even ahead of the requirements of navigation. Further diversions under the decree would be permitted only in the light of the necessities of navigation. The parties to the *Chicago* case, the Special Master, successive Secretaries of War, and this Honorable Court (so far as it has had occasion to consider the point *sub silentio*), apparently have felt no doubt that the claim of Chicago to a reasonable diversion for a domestic water supply was to some extent a prior lien upon the waters of the lakes, entitled to great respect unless expanded to grossly unreasonable limits. The doctrine of priority of claim in behalf of municipal water supplies has thus been given weight in the adjustment of an interstate controversy before this Court. Also, as the Special Master in the case at bar pointed out (Rep. Sp. M. 9), this Court "in the final decree [in the *Chicago* case] allowed a diversion estimated to reduce the level of the Great Lakes about one inch . . . into another watershed." It is submitted that the case is an authority which supports the Special Master's ruling against "any right of Connecticut to object to the diversion regardless of damage to the Connecticut River" (Rep.

Sp. M. 11-12) and purely because the diversion is to another watershed, provided the diversion is proper under the doctrine of equality of right and equitable division as between riparian States.

It is submitted that the cases just reviewed establish clearly the doctrine of "equality of right" or "equitable division" of the benefit of interstate streams as between the riparian *quasi*-sovereign States. This being so, Connecticut's exceptions numbered 10, 11, 13, 14, 15, 21, and 22 (Conn. Exc. pp. 10-12) are without merit, so far as they rest on the theory that this Court is bound by strict principles of riparian law.

C. International Law Establishes the Principle of Equitable Division of the Benefits of Interstate Waters as between the Sovereigns through whose Lands the Waters Pass. In Making an Equitable Division of Beneficial Use, Due Weight Must be Given to the Comparative Benefit to be Derived by Each Sovereign from Each Particular Use. The Fundamental and Most Important Use of Water is for Quenching Thirst and for Other Domestic Purposes.

We have contended above that this Court applies international law whenever it is appropriate for the settlement of controversies between the *quasi*-sovereign States of the Union. In the matter of the equitable division of interstate waters as between nations, international precedents and authorities are available which are of assistance in a cause like this, so far as the relation between two States of the United States is analogous to the relation between two nations of the world. There are numerous rivers which may be said to be international in the sense that they separate or traverse the territories of more than one State; and during the course of the past century an elaborate body of international law has been developed with reference to these rivers.

The chief interest in international rivers during the past century was in reference to their navigation. Hence most of the international law which has been developed has to do with problems of navigation. Numerous treaties have been made, the principal object of which is to protect the common interest of States in the navigation of streams. So numerous have these treaties been, and so general is their scope, that there may now be said to be a body of international law which exists apart from any basis to be found in particular treaties.

Of course, so far as the *issues of navigation* in the case at bar are concerned, the principles established by international law are of slight assistance, inasmuch as, under the Constitution, the control of navigable waters is vested almost entirely in Congress and in those to whom Congress has delegated authority. However, to the extent that international treaties and decisions regarding freedom of navigation of international waters attempt to apply the doctrine of equitable distribution of the benefits of the navigable capacity of such waters, those authorities strengthen the doctrine which this Court has (as we have argued above) applied consistently in interstate litigation.

The Development of International Law as to Uses of Water.

While most of the international law relating to international streams has been developed with reference to problems connected with their navigation, in recent years the waters of such streams have been put to many other uses. Water is now used more and more extensively for domestic purposes such as drinking, for sanitation purposes such as the disposal of sewage, for agricultural purposes such as irrigation, for industrial purposes such as the generation of electrical power, and for other purposes unconnected with navigation. We have collected a num-

ber of international precedents showing the principle of equitable division as it has been stated by commentators and as it has been applied through various methods in the adjustment of international and interstate disputes. [These international precedents will be found in Appendix A of a brief (bound in yellow) filed by Massachusetts in opposition to Connecticut's motion to strike out and to dismiss the defendant's answer. Copies of this brief are in the possession of the clerk of this Honorable Court.] Those precedents which bear most directly upon the issues now before this Honorable Court, we shall summarize briefly here. Perhaps the most striking examples of international provision for the use of the waters of a stream are to be found in the practice of the United States, which may be studied with reference to common waters of the United States and Mexico, and to common waters of the United States and Canada.

The Priority of Use Doctrine Recognized.

The development of our relations with Canada has frequently called for provisions concerning the diversion of certain boundary waters. By the convention of January 11, 1909, certain waters are defined as "boundary waters" and an International Joint Commission was created with jurisdiction over cases involving the use or obstruction or diversion of certain waters. Article 8 of this convention provides principles which are to guide the International Joint Commission, among which are the following:

> "The High Contracting Parties shall have, each on its own side of the boundary, equal and similar rights in the use of the waters hereinbefore defined as boundary waters.
>
> "The following order of precedence shall be observed among the various uses enumerated hereinafter for these waters, and no use shall be permitted which

tends materially to conflict with or restrain any other use which is given precedence over it in this order of precedence:

"(1) Uses for domestic and sanitary purposes;

"(2) Uses for navigation, including the service of canals for the purposes of navigation;

"(3) Uses for power and for irrigation purposes.

"The foregoing provisions shall not apply to or disturb any existing uses of boundary waters on either side of the boundary.

"The requirement for an equal division may in the discretion of the Commission be suspended in cases of temporary diversions along boundary waters at points where such equal division can not be made advantageously on account of local conditions, and where such diversion does not diminish elsewhere the amount available for use on the other side" (36 STAT. AT L., 2448).

Preference to Municipal Water Supplies.

In this treaty expressly appears not only a clear recognition of the doctrine of the equitable division of the beneficial user of international waters, but also a straightforward declaration that preference is to be given to a nation desiring to use water for domestic purposes over a nation desiring to use water for some less fundamental cause. A similar recognition of the prior claim of a domestic water supply is to be found in the final decree recently entered upon the recommendation of the Special Master in the *Chicago Drainage Canal* case (281 U.S. 696).

One interesting controversy has arisen under the treaty of January 11, 1909 (just quoted above), the decision of which clearly recognizes the prior importance of the use of water for domestic purposes. The International Joint Commission established under the treaty handed down an

opinion on January 14, 1914, concerning the application of the Greater Winnipeg Water District for the diversion and use of water from Shoal Lake and the Lake of the Woods. Shoal Lake is a tributary of the Lake of the Woods, a boundary water under the treaty. Winnipeg desired to make the diversion for domestic and sanitary purposes. The Greater Winnipeg Water District obtained the permission of the Province of Ontario, in which Shoal Lake is situated, to make such use of the water. The War Department of the United States entered an appearance before the Commission and stated that "the War Department feels that the proposed diversion by the Winnipeg Water District is so small a factor of the general problem as to be practically insignificant, and that no valid reason exists for objecting to its consummation." The town of Kenora, Ontario, however, opposed the diversion on the ground that it would lower the level of the Lake of the Woods and contended that other water was available to Winnipeg.

After thorough investigation the Commission found that the diversion was "not of any great moment" and approved the application. Its conclusion is as follows:

> "To sum up, we believe that it is absolutely necessary for the city of Winnipeg and the Greater Winnipeg Water District, the applicant, to obtain a sufficient supply of good, pure, and wholesome water; that after examining the available sources of supply, the applicant has shown that the best source, the cheapest, the most abundant, and the purest is Shoal Lake; that the diversion of the waters of Shoal Lake and the resultant decrease of the flow of the waters of the Lake of the Woods at the outlet of the lake, is, for the present at least, practically unimportant, and without any effect upon the industries and plants established at Kenora, and, finally, that the granting of the privilege of taking

> the waters of Shoal Lake has been surrounded by such safeguards that all the interests are amply protected."

An agreement between the United States and Canada was signed at Washington, February 24, 1925, for regulating the level of the Lake of the Woods. Article 2 of the agreement states its object to be to secure "the most advantageous use of the waters" for "domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes." This agreement dealing only with one particular body of water clearly recognizes not only the principle of equitable division but also the prior claim of a domestic water supply upon the waters of an international lake (see 44 STAT. AT L., 2108).

A Pending Equitable Division.

Preparatory work for a similar arrangement with Mexico, based upon the principle of equitable division, is now in progress under the authority of the Act of May 13, 1924, 43 STAT. AT L., Part I, p. 118, entitled:

> "An Act Providing for a study regarding *the equitable use* of the waters of the Rio Grande below Fort Quitman, Texas, in co-operation with the United States of Mexico." (Italics ours.)

Section 1 reads, in part:

> "The President is hereby authorized to designate three special commissioners to co-operate with representatives of the United States of Mexico in a study regarding the equitable use of the waters of the Rio Grande below Fort Quitman, Texas, with a view to their proper utilization for irrigation and other beneficial uses. . . ."

Foreign Interstate Litigation Precedents.

Courts, other than this Honorable Court, have seldom been called upon to deal with questions relating to the division of waters between States. But the jurisprudence of the Federal Tribunal of Switzerland affords some interesting cases. In 1878 the Canton of Argovie sought to restrain the Canton of Zurich from putting into effect certain concessions which would involve the damming of the river Johenbuch, which flowed from the territory of Zurich into the territory of Argovie. The Federal Tribunal found itself competent, but dismissed the application, on the ground that equality between the cantons did not exclude the common use of the waters and did not necessitate an undiminished or uninterrupted flow of the water (*Arrêts du Tribunal Federal Suisse*, IV, p. 34). The same principle was followed in *Canton of Argovie* v. *Canton of Soleure, Arrêts du Tribunal Federal Suisse*, XVIII, p. 689.

Summary—Equitable Division is the Guiding Principle.

The recent developments of treaty law on the subject of the use of waters in an international stream is clearly based on an effort to assure to the States concerned an equitable division of the waters, and we submit that the principle may be said to have become established that even in the absence of conventional agreement an equitable division may be made, so that each State through whose territory a stream flows may make an equitable use of the water. A tendency is clearly manifest, also, to distinguish between various uses which may be made of water. The hierarchy of uses will depend largely on the locality and on the special conditions prevailing with respect to the particular stream. In some cases, navigation is to be put first, perhaps; but it is significant that under some treaties it is provided that other uses should be given precedence, and that the Convention

of 1909 between the United States and Canada puts *before* navigation "uses for domestic and sanitary purposes." No more satisfactory classification of uses can be found than in the 1909 convention, and it is significant that that classification is followed in the enumeration in the *Lake of the Woods Agreement of 1925.*

In the Connecticut River watershed, of course, there can be no question of interference with navigation, in view of action taken by the War Department. It is merely a question of the propriety and equitable nature of the use being made by Massachusetts for domestic purposes, and the Special Master has found that use to be reasonable.

D. Under the Municipal Law both of Connecticut and of Massachusetts, so far as it Furnishes an Analogy of Weight in this Case, the Massachusetts Project would be Deemed Reasonable.

1. Under the Riparian Law in Force both in Massachusetts and in Connecticut a Riparian Owner is Entitled to Make a Reasonable Use of the Waters Flowing Past His Land, having Due Regard for the Interests of Upper and Lower Riparian Owners upon the Same Stream.

The general common-law rule as to the rights of riparian owners, as in force in Massachusetts, has been stated as follows:

> "The right of each riparian owner is to have the natural flow of the stream come to his land and to make a reasonable and just use of it as it flows through his land, subject, however, to the like right of each upper proprietor to make a reasonable and just use of the water on its course through his land and subject further to the obligation to lower proprietors to permit the water to pass away from his estate unaffected ex-

cept by such consequences as follow from reasonable and just use by him."

Stratton v. *Mount Hermon Boys' School*, 216 Mass. 83, 85 (see cases cited).

See *Taft* v. *Bridgeton Worsted Co.*, 237 Mass. 385, 388.

Collins Mfg. Co. v. *Wickwire Co.*, 14 Fed. (2d) 871, 872.

Parker v. *American Woolen Co.*, 195 Mass. 591, 598-599.

Mason v. *Whitney*, 193 Mass. 152, 158.

McNamara v. *Taft*, 196 Mass. 597, 599.

Isbell v. *Greylock Mills*, 231 Mass. 233, 236.

Parker v. *Griswold*, 17 Conn. 288, 299.

Stamford Extract Mfg. Co. v. *Stamford Rolling Mills Co.*, 101 Conn. 310, 320.

Buddington v. *Bradley*, 10 Conn. 212.

What constitutes a reasonable use is purely a question of fact, involving an application of the legal principle above stated to the situation presented before the Court.

Elliot v. *Fitchburg R.R.*, 10 Cush. 191, 195.

Mason v. *Whitney*, *supra*.

Parker v. *American Woolen Co.*, *supra*.

McNamara v. *Taft*, *supra*, at p. 599.

Roach v. *Sturdy*, 250 Mass. 357, 358-359.

Hazard Powder Co. v. *Somersville Mfg. Co.*, 78 Conn. 171.

Keeney & Wood Mfg. Co. v. *Union Mfg. Co.*, 39 Conn. 576 (criteria as to reasonable use of water by a mill).

Water Commrs. v. *Perry*, 69 Conn. 461, esp. 467.

Donnelly Brick Co. v. *New Britain*, 106 Conn. 167; 137 Atl. 745.
Gillett v. *Johnson*, 30 Conn. 180.
Parker v. *Hotchkiss*, 25 Conn. 321, 330.

It is undisputed, both in Connecticut and Massachusetts, that diversion of water of a stream for use upon riparian property within the same watershed is entirely proper if it constitutes as a matter of fact a reasonable use of the waters of the stream by the riparian owner.

Stratton v. *Mount Hermon Boys' School*, *supra*.
Hittinger Fruit Co. v. *Cambridge*, 218 Mass. 220 (percolating waters).
Isbell v. *Greylock Mills*, 231 Mass. 233 (where relief was denied).
Keeney & Wood Mfg. Co. v. *Union Mfg. Co.*, 39 Conn. 576, 582 (where diversion and mill use are compared).
Gillett v. *Johnson*, 30 Conn. 180, 183 (diversion of a small stream for purposes of irrigation).
Parker v. *Griswold*, 17 Conn. 288, 297 *et seq.*
See *Wier* v. *Covell*, 29 Conn. 197 (where the decision is based in part upon conveyances there involved).

As to a diversion outside the watershed, the Massachusetts cases are clearly to the effect that use of water outside the watershed is proper if in fact the use in the particular case constitutes a reasonable use of the waters of the stream in such a way as to cause no material damage to the interests of lower riparian owners. Unless there is actual or perceptible damage to a lower riparian owner, not even

nominal damages will be awarded upon his bringing an action of tort based upon the diversion.

Elliot v. *Fitchburg R.R.*, 10 Cush. 191.
Stratton v. *Mount Hermon Boys' School*, 216 Mass. 83, 85.

Upon the same principle, specific relief in equity will be denied to a complainant who cannot show that the diversion which he seeks to enjoin has caused actual damage to his right to make a reasonable use of a stream.

Isbell v. *Greylock Mills*, 231 Mass. 233, 236.

In most of the decided Connecticut cases the diversion complained of was in any event an unreasonable use of the water under the particular circumstances involved, so the question discussed in Massachusetts in the case of *Elliot* v. *Fitchburg R.R.*, 10 Cush. 191, has not been squarely ruled upon in Connecticut. The majority of the riparian cases in the two States deal with diversions from very small streams where any interference with the flow of the stream would be directly and immediately felt by lower riparian proprietors. None of the decided cases involved a situation of fact where the diversion, though taking many gallons of water, removed from the watershed only a very small percentage of the stream flow at the point where it reached the land of the complainant lower riparian owner. The Courts deciding the riparian precedents in the two jurisdictions did not have before them a situation involving large riparian owners and diversions of considerable quantity in themselves but of small proportions to the normal stream flow. This fact, among others, makes the riparian precedents hardly applicable to the case at bar—where the two riparian owners involved are two *quasi*-sovereign States; where the flow of water in the interstate

stream is on the average 17,000 cubic feet per second at the point where it reaches the complainant State (see Joint Sum. p. 3; Transcript, pp. 137, 656); where the diversion (taking place some fifty or more miles upstream on small tributaries) involves on the average about two per cent of the flow at the state line (see Rep. Sp. M. 5) and takes place almost entirely in times of very high flows.

The Courts of Connecticut will not award substantial damages for a diversion from the watershed which causes no material injury, nor will they enjoin such a diversion. Apparently due weight is given to considerations of comparative damage and to facts constituting a basis for giving substitutional relief by way of damages rather than specific relief in the form of an injunction.

Watson v. *New Milford Water Co.*, 71 Conn. 442, 450.

Cf. Harding v. *Stamford Water Co.*, 41 Conn. 87, 95.

Balf Co. v. *Hartford Electric Light Co.*, 106 Conn. 315.

In substance, we submit, the rule in Connecticut is fully as liberal with respect to reasonable but permanent diversions from the watershed as that laid down in the *Stratton* case for Massachusetts.

That the State of Connecticut permits the diversion of water from the watershed for use as a domestic water supply under State or municipal control is apparent from the cases cited. Due compensation for *actual damage* caused by the diversion must, of course, be paid.

See also *Beckerle* v. *Danbury*, 80 Conn. 124, 127.

It would seem that the Connecticut Courts in a proper case would give due consideration to the amelioration of

damage by compensation in kind by augmenting the flow of the diverted stream in dry seasons.

Harding v. *Stamford Water Co.*, 41 Conn. 87, 93.

The rule of reasonable user in the light of the circumstances in each particular case also extends to analogous matters, such as pollution. Each State permits a riparian owner to appropriate a reasonable amount of the capacity of a stream for dilution of sewage and waste.

Parker v. *American Woolen Co.*, 195 Mass. 591.
McNamara v. *Taft*, 196 Mass. 597.
Collins Mfg. Co. v. *Wickwire Co.*, 14 Fed. (2d) 871.
Merrifield v. *Lombard*, 13 Allen 16.
Harris v. *Mackintosh*, 133 Mass. 228.
Martin v. *Gleason*, 139 Mass. 183.
Nolan v. *New Britain*, 69 Conn. 668.
Platt Bros. & Co. v. *Waterbury*, 72 Conn. 531.
Laxton v. *Herrick*, 83 Conn. 417, 425.
Morgan v. *Danbury*, 67 Conn. 484.
See *Donnelly Brick Co.* v. *New Britain*, 106 Conn. 167, and cases cited.
See also *Rockport* v. *Elwell*, 219 Mass. 287.
Ingraham v. *Dunnell*, 5 Met. 118 (where apparently damages were held to be adequate).
Brookline v. *Mackintosh*, 133 Mass. 215.
Stamford Extract Mfg. Co. v. *Stamford Rolling Mills Co.*, 101 Conn. 310.
Rockville, etc., Co. v. *Koelsch*, 90 Conn. 171.
Cf. DeWitt v. *Bissell*, 77 Conn. 530.

So far as the local law of Connecticut and of Massachusetts is here of importance, we submit that it lays down a

principle of reasonable user as between riparian owners—a principle of equality of right and opportunity limited only by the obligation not to inflict serious and substantial injury on others equally entitled. It further appears that both States lay some emphasis on the doctrine that specific relief can only be grounded on serious injury to the complainant by the diversion, and even if serious injury appears, serious consideration will be given by the Courts to equitable considerations of expediency and comparative damage. It is submitted, however, that this is not a matter to be settled by an application of any strict riparian rule (such as might be enforced between individuals), even regarding both States engaged in this case as riparian owners on a large scale. On the contrary, Massachusetts contends that the Special Master was right in ruling (Rep. Sp. M. 6-12) that broad considerations of equity and right should be taken into account in a controversy between States, and that "if Massachusetts would have a right to abstract this much water under any system of law she might follow and for any use legal by that system," Connecticut has no better basis for objecting to the present diversion "merely because she and Massachusetts adopted the common law of England."

2. *Connecticut Habitually Permits Diversions of Streams to Other Watersheds for the Purpose of Supplying Municipalities with Water for Domestic Use. Connecticut in Equity Cannot Complain if Massachusetts Makes Reasonable Use of Interstate Waters Arising within her Borders for Similar Purposes, even if a Diversion be Necessary; provided Massachusetts does Not Permanently Abstract More than the Share of Such Interstate Waters to Which She is Entitled under the Doctrine of Equal Division of Benefit.*

Under the decisions of this Court, the municipal practice in the States, which are parties to the controversy, is

considered in the determination of the basis of making an equal division of benefit. In the case at bar, if it appears that Connecticut habitually permits diversion of streams for the purpose of water supplies, or that Connecticut recognizes the priority of a claim to use water for domestic purposes over a claim to use water for power or for sanitation, it would warrant this Court in coming to the conclusion that the doctrine of equitable division should be applied so as to permit Massachusetts to make similar diversions for similar purposes, provided that the action of Massachusetts does not have any seriously detrimental effect upon the ability of Connecticut to make a like diversion.

Connecticut for some years has by general statute permitted municipalities and public service water companies to make diversions for water supply purposes. Section 2542 of the General Statutes of Connecticut (1918 revision) reads in part as follows:

> "*Power to take lands and streams.* Any town, city, borough or corporation authorized by law to supply the inhabitants of any town, city or borough with pure water for public or domestic use may take and use such lands, springs, streams or ponds, or such rights or interests therein, as the superior court, or any judge thereof in vacation, may, on application, deem necessary for the purposes of such supply. . . . Compensation shall be made to all persons entitled thereto in the manner provided by section 2543."

Chapter 131 of the General Statutes contains comprehensive provisions for the safeguarding of water supplies, and shows the importance attached by Connecticut to a pure supply of suitable and fresh water for its cities and towns. Section 5181 gives a broad permission to State departments to take water for use in State institutions.

By special act many municipalities and public water companies in Connecticut are authorized to make particular

diversions for municipal water supplies; in some cases the grant of power to make diversions being couched in general terms and apparently applying to all water flowing through or lying within Connecticut; in other cases, limited to the waters within stated geographical limits. An exhaustive list of the many special acts incorporating water companies or authorizing general or particular diversions would serve no useful purpose here. A few instances representative of a very large body of such legislation will suffice.

Ansonia Water Company, Incorporated, Conn. Act of July 9, 1884, Priv. Laws, Conn., vol. 5, p. 665, section 9, provides, in part:

> "The said company shall have full power . . . to construct . . . such reservoir or reservoirs as they may deem expedient or necessary; to take and use the water of any spring or springs, stream or streams, or other waters to such extent and in such manner as may be necessary or expedient . . . to the most perfect and complete supply of the borough of Ansonia with pure water for all public and private uses. . . ."

The charter was amended in 1909 (Spec. Laws, Conn., vol. 15, p. 971) to permit supplying the village of Ansonia "with an abundant supply of pure water for public, domestic, and general use."

Similar provisions are to be found in the Special Laws, as follows:

Vol. 5, p. 244 (1859), Birmingham;
Vol. 11, p. 38 (1893), Bradford Water Company;
Vol. 4, p. 1356 (1856), Bridgeport Water Company;
Vol. 9, p. 910 (1884), Bristol Water Company—restricted by amendment to geo-

graphical limits, vol. 16, p. 240 (1911), but extended somewhat, Spec. Acts, Conn. (1919), c. 164;

Vol. 5, p. 673 (1864), Centreville Water Company;

Vol. 15, p. 584 (1907), Cornwall Water Company;

Vol. 5, p. 333 (1860), Danbury;

Vol. 12, p. 91 (1895), Farmington Water Company;

Vol. 14, p. 323 (1903), Glenville Power and Water Company—[providing for the development of reservoirs on the Byram River, an interstate stream. Amended Spec. Acts, Conn., 1927, c. 340, to permit supplying certain towns in Westchester County, State of New York, as well as Connecticut towns. A similar provision with respect to the Greenwich Water Company is found in Spec. Acts, Conn., 1925, c. 340.]

Spec. Acts, Conn., 1925, c. 295, gave broad new powers to the New Haven Water Company with respect to a diversion of the waters of the Hammonassett River (see also Spec. Acts, Conn., 1919, c. 129).

A diversion was authorized from the Connecticut River itself to supply Hartford (Priv. Laws, Conn., vol. 4, pp. 1364, 1366 [1851]). This supply has since been abandoned and has been supplanted by other diversions from the pure upland waters of interstate tributaries of the Connecticut River (Conn. Spec. Laws, vol. 16, part 1, pp. 389-395; Joint Sum. p. 88; Transcript, pp. 510-511, 1456).

These statutory citations are sufficient, we submit, to show that in Connecticut there is a well-established policy of permitting diversions for the purpose of water supplies. The decisions of the Courts sustain this policy to the utmost, and, though compensation must be paid for any

damage to property actually sustained by individuals, it is a question in each case of condemnation what that damage, if any, really is. If there were no substantial damage to a lower riparian owner, only nominal damages would be given.

The extent to which the Connecticut policy goes is shown by the case of *East Hartford Fire District* v. *Glastonbury Power Co.*, 92 Conn. 217. In that case the Connecticut Court upheld a taking for municipal water-supply purposes of water privileges held by the defendant company for future use for public utility purposes. In effect the Connecticut Court announced that the Legislature had intended to establish a priority of privilege in favor of municipal water supplies, superior even to use of water for other public or *quasi*-public purposes.

Nor is the Connecticut policy supporting privileged use for municipal water supplies confined to any meagre construction of present necessities. The cities and towns of the State and the public service water companies that supply them are entitled to make due preparations for future necessities.

In *New Haven Water Co.* v. *Russell*, 86 Conn. 361, the power and obligation of a public service water company to anticipate future water requirements of a great city was stated by *Wheeler*, J., as follows:

> "The respondents further insist that the court erred in overruling its claim that 'the time within which such reasonably definite amount of water is necessary, must be either present or within a reasonably short time in the future'; and they ask to have the finding corrected in certain particulars upon which the conclusion of necessity rests, and insist that the facts found by the judge do not legally support his conclusion of necessity.
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> * * * * * * * *

> ". . . A private corporation engaged in furnishing a water-supply to a community owes it the duty of providing an adequate supply of wholesome water at all times. Experience teaches that consumption increases largely in the summer season, and that changeable seasons, long droughts, and the liability of accidents are contingencies which must be guarded against; a supply adequate for the ordinary season or the present need will not protect against such contingencies. . . . Growth in population and in industrial activity, with consequent increasing use of water, must be anticipated and provided for. . . . Provision for all such likely contingencies must not be scant; it must be ample, so that the health of the people be preserved and their property safeguarded from fire, and all their countless activities—so variously served by an abundant water-supply—be sustained and developed. . . ."

The Special Master in the case at bar has found that Connecticut will be caused no substantial damage by the Massachusetts water-supply project. Upon such an actual state of fact, if found by the trier of the fact in an *intra*state condemnation suit, the lower riparian owner would be entitled to no damages, or at most to purely nominal damages. Under the most strict and rigid construction of the common law of riparian rights a lower riparian owner would in such circumstances have no basis of action against an upper riparian owner causing no damage by a diversion. Certainly he could obtain no specific relief in equity. Even if some slight damage were caused to Connecticut by the proposed diversions (which does not appear here), the practice of Connecticut with respect to municipal water supplies would lead this Court in applying the doctrine of equitable division of the benefit of interstate waters to consider whether equity did not require that Connecticut be remitted to substitutional relief by

way of damages at law and individual inhabitants to relief based upon the terms of the Massachusetts statutes. See *Mannville Co.* v. *Worcester*, 138 Mass 89; *Brickett* v. *Haverhill Aqueduct Co.*, 142 Mass. 394, 396; *Andrus* v. *Berkshire Power Co.*, 145 Fed. 47; 147 Fed. 76; cert. den. 203 U.S. 596. See also an interesting opinion in which the Attorney General of Massachusetts declined to take action against Connecticut at the request of Massachusetts landowners injured to some extent by the flowage of their land by a power project carried out in Connecticut. In vigorous language the then Attorney General states that it is not his duty to represent the Commonwealth in interstate controversies except where in some way the general welfare of the community has been seriously affected by the action of another sovereign. The existence of a right to sue for compensation in Connecticut even for damage to Massachusetts land was regarded as affording a reasonable remedy to citizens of Massachusetts affected by the act of the Connecticut company. See Memorandum, Mass. Op. Atty. Gen., vol. III (1908), p. 596. The existence of a remedy at law for individual inhabitants of Connecticut or persons owning lands in Connecticut is an element which this Court should consider under the doctrine of equitable division, particularly in view of the fact that the statutes of Connecticut have established a policy of forced taking of waters for municipal water supplies.

E. The Special Master was Correct in Finding that the Metropolitan District about Boston ought Not to be Compelled to Resort to Inferior, Polluted, and Inadequate Waters Said by Connecticut to be Available in Eastern Massachusetts.

1. The Contention of Connecticut that Massachusetts has Available Supplies of Water Elsewhere than in the Ware and Swift Rivers is Immaterial, unless This Court Reverses the Findings of Fact of the Special Master and Decides that Connecticut has Shown Substantial Damage Resulting from Some Act of Massachusetts. In That Event the Evidence upon the Existence of Other Water Sources may be Material as Bearing upon the Issue of whether This Honorable Court in Equity Ought to Grant any Specific or Injunctive Relief.

The Connecticut reply avers that there are supplies of water available in Eastern Massachusetts which the General Court of Massachusetts could have authorized Boston to use. That allegation and the evidence introduced in support of the allegation by Connecticut (over the objection, duly noted, of Massachusetts, Transcript, p. 1012) is, Massachusetts submits, immaterial. In order to make this allegation and evidence material it is necessary to assume for the sake of argument that Connecticut has proved conclusively substantial and presently threatened damage to the complainant State or its citizens.

The principal contention of Massachusetts is that Connecticut has not proved any substantial damage, and that this fact alone precludes any relief to Connecticut. However, if it be assumed that Connecticut has proved substantial damage, even then Massachusetts contends that Connecticut is not necessarily entitled to an injunction. This Honorable Court, sitting as an international tribunal and as a court of equity, has been accustomed to apply in inter-

state controversies equitable principles of comparative damage and of substitutional or conditional relief rather than specific or injunctive relief. Upon this assumption just made (that Connecticut has proved substantial damages), we submit that this Honorable Court would weigh the damage to Connecticut against the reasonable necessities of Massachusetts for a proper and acceptable water supply. We submit that, if such a balancing of interests becomes necessary, the evidence as to the existence of a supply of water in Eastern Massachusetts reveals clearly that, as the Special Master found (Rep. Sp. M. 39, 51-52), there is no reasonably adequate, acceptable, or satisfactory water supply there available for the use of the Metropolitan District about Boston; and that the result of granting an injunction will be to force Massachusetts to provide Metropolitan Boston with a grossly inferior and hazardous supply, causing a further diminution in the flow of Eastern Massachusetts streams, disastrous to the health and economic welfare of the community. The pleadings and the evidence also show, we submit, that the damage caused to Connecticut by denying an injunction would be trivial and insubstantial; that Massachusetts stands ready to pay full compensation for any actual damage caused by its project; and that every consideration of comparative damage should lead this Court to deny injunctive relief.

2. Massachusetts has Established, as the Special Master has Found, that There are Not Adequate Supplies of Pure Water in Eastern Massachusetts to Meet the Demands of the Population of That Region in the Future, and that it is Necessary to Obtain the Ware-Swift Supply Chosen by the Massachusetts Legislature after Due Deliberation. Connecticut has Not Shown that the Special Master was Incorrect in His Conclusion that Boston ought Not to be Forced to Adopt the Inadequate Schemes Suggested by Connecticut for Supplying the City with Hazardous Treated Water from Inadequate and Polluted Eastern Massachusetts Sources.

The general finding of the Special Master upon the suggestion of Connecticut that Boston should resort to inferior and polluted sources of water in Eastern Massachusetts has been summarized above.

At the hearings before the Special Master, as he found (Rep. Sp. M. 31), Massachusetts introduced evidence and exhibits (Exhibits D-13, D-32, D-34, and D-35) showing in detail what the water supply needs and available resources were; not only as actually existing in 1929, but as estimated for the years 1970 and 2000. Southeastern Massachusetts, including Cape Cod, was, as the Special Master found, regarded by both parties as self-sufficient and as having no more water available than the section would reasonably need within the fairly close future (Rep. Sp. M. 30; see Joint Sum. p. 217; Transcript, pp. 1586-1588). The estimates of the growth of population in Northeastern Massachusetts, made by expert witnesses called by Massachusetts, the Special Master (Rep. Sp. M. 31) found to be "within the reasonable probabilities." As a result of this estimated growth in population, Northeastern Massachusetts by 1970 will probably be faced with a deficit of 178 million gallons of water a day, which will have to be supplied from new sources not now used, even after use has been made of all of the available supplies of pure water in Eastern Massachusetts.

The Massachusetts evidence showed that the supplies set out on the following table were the only sources of water in Northeastern Massachusetts capable of use for the purpose of supplying that section with pure drinking water (1) without depriving Southeastern Massachusetts of its supply of water; (2) without going outside the boundaries of the Eastern watershed and into the watersheds of interstate streams, and (3) without making use of unduly hazardous and polluted supplies (see Rep. Sp. M. 31-32; Joint Sum. pp. 158, 160).

TABLE A.[1]

	1929	1970
Total population	2,860,000	4,572,000
Total million gallons a day water-supply resources:		
District (not counting Ware and Swift)	147	134
Local sources (of District Group)	61	38
Local sources (of outside groups except the Ipswich)	50	32
Ipswich River	70	70
Assabet River (emergency supply)	15	15
Total available sources	343	289
Total consumption requirements:		
District	197	373
Outside the District	47	94
Total requirements	244	467
Surplus*	99	
Deficit		178

[*Distributed over a number of independent communities with no connections making their surpluses mutually available.]

[1]Table A above, printed as it appears at page 31 of the Report of the Special Master, so far as it concerns water *consumption,* is based upon the evidence of water consumption

Connecticut then attempted to show that, besides the sources of water in Northeastern Massachusetts, testified to by witnesses called by Massachusetts, there were available the following sources (see Joint Sum. p. 160):

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requirements tabulated in the Joint Summary of the Evidence at pages 158-159, top. The figures in Table A above showing water *resources* is based upon the evidence of witnesses called by Massachusetts tabulated in the Joint Summary of the Evidence at pages 159-160. The material in Table B (showing a tabulation of sources said by Connecticut witnesses to be available in addition to those supplies included in Table A) is obtained by analysis of the table printed on the middle of page 160 of the Joint Summary. The table last mentioned (Joint Sum. p. 160, middle) shows in million gallons a day the amount of water, in addition to supplies *now developed* by Massachusetts, which *Connecticut* witnesses said was available in Northeastern Massachusetts. By subtracting from 179 million gallons a day (the total yield of the Fifteen Watershed plan as testified to by Connecticut witnesses—see Joint Sum. p. 160, middle), 85 million gallons a day, the potential yield of the *undeveloped* Northeastern Massachusetts sources (Ipswich River, 70 million gallons a day; Assabet River emergency supply, 15 million gallons a day—see Joint Sum. p. 160, top) as testified to by witnesses called by Massachusetts, a figure of 94 million gallons a day is obtained. That 94 million gallons a day (as set out in detail in Table B) is the total amount of yield (from sources in Northeastern Massachusetts *other than* the Merrimack River) which Connecticut witnesses claimed was available in *addition* to *all* the sources in Northeastern Massachusetts said to be available by witnesses called by Massachusetts. This reconciliation of the tables set out in this brief and those set out in the Joint Summary at pages 159-160 shows clearly that the tabulations by the Special Master at pages 31 and 32 of his report were entirely correct.

TABLE B.

	Million gallons a day
Shawsheen River	30
Lower Sudbury River	27*
South Sudbury (in addition to that now used by Massachusetts)	17*
Assabet River (in addition to the 15 million gallons a day admittedly available as an emergency supply)	20
Total	94

[*By typographical mistake these two figures were transposed in the Report of the Special Master (Rep. Sp. M. 31-32).]

The Special Master found that these sources "will be insufficient to meet the 1970 probable deficit." Connecticut also urged that Northeastern Massachusetts could use water from the heavily polluted Merrimack River by treating it by a complicated process of storage, aeration, filtration, and chlorination. The Special Master ruled that Massachusetts ought not to be forced to use this objectionable and inferior source (Rep. Sp. M. 51-52).

The Special Master found that, by the enactment of the legislation authorizing the Ware–Swift project after a long and careful study of all possibilities, the people of Massachusetts had rejected the Eastern supplies, including the Merrimack River (suggested by Connecticut), as objectionable. The legislation and preceding investigations, the Special Master found (Rep. Sp. M. 30), "make a *prima facie* case that these supplies are inadvisable either because inadequate or unfit." The Special Master then considered Connecticut's "effort to show that this legislative determination is wrong," and came to the conclusion that the two schemes [suggested by Connecticut

for supplying Eastern Massachusetts with water from sources in addition to those which witnesses called by Massachusetts testified were available] were undesirable and objectionable. These two Connecticut schemes, which the Special Master found ought not to be forced on Metropolitan Boston were:

(*a*) The so-called *Fifteen Watershed* scheme, which proposed the accumulation of water from fifteen separate small water sources in Northeastern Massachusetts.

(*b*) The so-called *Merrimack River* scheme, involving the diversion of 200 million gallons a day of water from the highly polluted Merrimack River to augment the present Boston supply after extensive treatment of the polluted Merrimack waters.

In very brief form the basis of the Special Master's finding that Metropolitan Boston ought not to be obliged to adopt either of these schemes or any of their component parts was as follows:

Bases of Objection to the Fifteen Watershed Scheme.

1. The scheme will produce, according to the most optimistic statements of the Connecticut experts, only 94 of the 178 million gallons a day of the 1970 deficit (Rep. Sp. M. 32).

2. The scheme, involving the use of a number of small units, would be difficult to administer and operate, and is unsound from an engineering standpoint (Rep. Sp. M. 32-35).

3. It involves the use, to a large extent, of polluted waters, inferior, even when treated, to waters from a pure source like the Ware–Swift project (Rep. Sp. M. 34, 36).

4. The increasing population upon the watersheds involved in the scheme will result in increased pollution and greater difficulty in producing a pure water by treating the polluted waters (Rep. Sp. M. 36-38). There is a dis-

tinct possibility that it would be necessary to abandon these sources, if they were adopted, within a reasonable time in the future (Rep. Sp. M. 38-39).

5. Because of presence of swamps and pollution in the watersheds included in the scheme, the water furnished [even when treated] would be frequently objectionable to the public because of high color and tastes and odors. There is danger of disease from filter breakdown due to the presence of the human factor (Rep. Sp. M. 37, 38, 39).

6. It was left uncertain by the evidence whether this scheme, suggested by Connecticut, could be carried out without infringing on the reasonable requirements of certain Eastern Massachusetts mills for process water (Rep. Sp. M. 37-38).

Bases of Objection to the Merrimack River Scheme.

1. The raw water of the Merrimack River is highly polluted both by human sewage and industrial wastes (Rep. Sp. M. 40-41, 45, 52).

2. The intake of the proposed scheme would necessarily be directly south of the New Hampshire border. It would be impossible for Massachusetts to protect from pollution so much of the watershed of the Merrimack River as lies in New Hampshire; particularly as it is now practically "a legalized public sewer" (Rep. Sp. M. 40, 45-46, 52).

3. Because of the high degree of pollution of the Merrimack River the danger of filter breakdown would be an unusually great hazard; 100 per cent efficiency in filter and treatment plant operation would be impossible (Rep. Sp. M. 42, 43, 44, 52).

4. Certain industrial wastes found in the Merrimack River are unusually difficult to eliminate, and, even with the best modern methods of water treatment, cause objectionable tastes and odors (Rep. Sp. M. 43, 46; see also 41, 44, 52).

5. Pollution of the Merrimack River Valley will probably increase over a period of years as population grows and industry develops (Rep. Sp. M. 41, 43, 45, 47).

6. The available reservoir sites in Eastern Massachusetts are greatly inferior to the "ideal" site (Rep. Sp. M. 36) available in the sparsely settled valley of the Swift River. The whole project (suggested by Connecticut) of using the Merrimack water as a domestic supply is inferior from an *engineering* standpoint to the Ware-Swift project (Rep. Sp. M. 43, 52).

7. Public opinion, always an element of great importance in water-supply matters, renders the polluted Merrimack water objectionable as a supply (Rep. Sp. M. 47, 50-51).

8. It is a general principle of water-supply engineering that "where two sources are equally available, one polluted, the other clean, the clean water ought to be chosen" (Rep. Sp. M. 47). The Ware-Swift supply is much superior in quality to Merrimack River water (Rep. Sp. M. 52).

9. There is danger that the diversion from the Merrimack River proposed by Connecticut would, if carried out, cause an important and undetermined injury to present and future factories at Lowell and Lawrence, Massachusetts (Rep. Sp. M. 48, 52).

10. The interests of navigation on the Merrimack River are important enough to justify the conclusion that in times of low flow the diversion from that river proposed by Connecticut could not be carried out to its full extent, without the probability of a substantial reduction of it by the Secretary of War (Rep. Sp. M. 48-49, 52).

An additional objection to taking a supply from the Merrimack River is found in the testimony of Massachusetts witnesses that there would be a very real community damage to Lowell and Lawrence if the power plants in those cities were disturbed. No estimate in money of this

damage could be made, but every home-owner and merchant in those cities would be adversely affected, since the cities are built up around the water power of the Merrimack River (see Rep. Sp. M. 48; Transcript, pp. 1795-1796, 1836; Joint Sum. pp. 256, 243).

The Few Connecticut Exceptions to Findings of Fact on This Phase of the Case.

Connecticut has taken but four exceptions to the findings of fact of the Special Master upon so much of the case at bar as deals with the availability of supplies of water for Eastern Massachusetts (Exceptions numbered 58, 59, 66, and 67, pp. 27-28, 31-33). Two of these exceptions (Exc. Nos. 58, 59) are to the Special Master's subsidiary findings of fact as to matters in connection with the possibility of using the Merrimack River as a source of supply. One (Exc. No. 67) deals with the question of burden of proof, also raised by certain so-called "exceptions as to the law" (see Exc. Nos. 61, 62, 63, 64, 65, pp. 28-31). Exception No. 66 (Conn. Exc. p. 31) objects to the failure of the Special Master to find that, if the Ware–Swift project could not be carried out, Eastern Massachusetts could get some water somewhere. That Eastern Massachusetts could get an unsatisfactory and grossly inferior water in inadequate quantity is, of course, true; but the Special Master has found, in substance, that that region within its own limits could get no water of sufficiently adequate quantity and of good quality, safe, pure, and non-hazardous, which it ought to be compelled to drink instead of the Ware–Swift supply. This exception, therefore, is immaterial, since it in no way tends to dispute the propriety of the Special Master's finding that such polluted sources as could be obtained in Eastern Massachusetts are so inadequate in quantity, so inferior to the Ware–Swift supply, and subject to so many objections, that Boston ought not to be required to make use of them.

The Exceptions to Subsidiary Findings as to the Eastern Supply.

Exception numbered 58 (Conn. Exc. p. 27) deals with the Special Master's casual reference (Rep. Sp. M. 50) to the Lawrence water supply. The Special Master in substance found that public opinion in Lawrence is so strong against the use of Merrimack River water for drinking, that bottled water is used to an extraordinary extent. This finding was well warranted by the contents of a report [by agreement introduced in evidence, Transcript, p. 1363] on the Lawrence water supply prepared in 1916 by the firm of Morris Knowles, Inc., now retained by Connecticut (see Joint Sum. p. 230; Transcript, p. 1660). Mr. Jacobs of this firm was in fact the principal witness for Connecticut during the hearings. The following is an excerpt from the report:

> *"A Measure of Dissatisfaction.*
>
> "The value of an enterprise can often be estimated from the success of its competitors, and remarkably enough perhaps, such a criterion of worth is at hand, ready to be applied to the Lawrence water supply. We refer to the 'spring' water business in Lawrence. . . .
>
> ". . . Besides the municipal supply, however, Lawrence has still another source of water supply in the various bottled spring and well waters which are sold throughout the city. These waters . . . are peddled from house to house by some 15 different dealers at prices ranging from 3 to 5¢ per gallon. . . . The enterprise is of large proportions, so large in fact that it may be considered an important rival to the municipal supply. The total amount of spring water business in 1917 in Lawrence amounted to only a little less than $70,000 or 55 per cent of the average an-

nual revenue from all water consumers, of the Water Department itself.

"That this state of affairs is entirely abnormal is shown by Diagram M, wherein the consumption of spring waters per 100,000 population in Lawrence is graphically compared with that in a number of other cities. The diagram will show at a glance that the use of spring water per capita in Lawrence is many times that in any of the other five representative cities. There must be some reason for this striking contrast, and we believe the reason to lie more or less self-evidently in the dissatisfaction of the public with the municipal water supply."

Augustine X. Dooley, an attorney of Lawrence, Massachusetts, testified that since 1915 he has been a member of the Commission on Water Supply for the City of Lawrence, and that the sole function of this Commission was, and still is, to find a suitable supply of water for that city other than the Merrimack River (see Joint Sum. p. 230; Transcript, p. 1659). The reason for seeking a new source of supply was because of the fact that the water was taken from the polluted Merrimack River, that it was a "public sewer," and that the people of that city vigorously objected to drinking sewage even though it was treated (see Joint Sum. p. 231; Transcript, p. 1661). The feeling in Lawrence with reference to the use of the Merrimack River as a source of water supply is shown by the extremely large sale of spring water in that city as compared with the sale of such waters in other communities. Spring water is used in most of the public buildings of Lawrence (see Joint Sum. p. 231; Transcript, p. 1663). In the witnesses' opinion, the opposition of the people of Lawrence to the use of the water from the Merrimack River is as marked now as it ever was (Joint Sum. p. 233; Transcript, p. 1665).

These excerpts from the evidence show that the Special Master was thoroughly warranted in making the finding complained of in exception No. 58.

Exception No. 59 objects to the Special Master's findings that "The Merrimack River has thus become a legalized public sewer . . . There is no certainty of its improvement and no certainty that it will not become more polluted" (Rep. Sp. M. 45).

The excerpt from the report of the above-mentioned firm of Morris Knowles, Inc. (at a time when its members were serving in a responsible professional capacity), referred to by the Special Master (Rep. Sp. M. 47); the evidence of Mr. Barbour, quoted by the Special Master (Rep. Sp. M. 40-43); the comprehensive testimony of Mr. Eddy (Transcript, p. 2047 *et seq.*); all support the Special Master's finding. Mr. Eddy in substance testified that the discharge of sewage of the population on the drainage area of the river above Tyng's Island amounts to about 16½ million gallons a day, of which 11 million gallons a day comes from New Hampshire (Joint Sum. p. 278; Transcript, p. 2047), figures which he believes will be doubled by 1970. By way of illustration he said that at the present time there would be approximately two-thirds of a teaspoonful of sewage in a glass of water. Approximately 29 million gallons of industrial wastes per day are contributed to the river by industries in New Hampshire, and at the very dry weather flow, recorded in 1917, about one-fifth of the water of the river would have been comprised of industrial wastes (Joint Sum. p. 279; Transcript, p. 2049)—"a grossly polluted stream from the point of view of a water supply" (Joint Sum. p. 280; Transcript, p. 2057). "In other words," said Mr. Eddy, "in a tumbler full of river water about one-fifth would have been industrial wastes" (Joint Sum. p. 279; Transcript, p. 2049).

He further testified that in his opinion the Merrimack River will always be used as an industrial stream and that

it is inconceivable that the stream "will ever be cleaned up in the sense which we would expect in order to make it suitable for water supply purposes" (Joint Sum. p. 278; Transcript, p. 2042).

Mr. Eddy did state that the number of *bacteria coli* in the river had been decreasing in recent years (Joint Sum. p. 280; Transcript, p. 2058) for some unknown cause. He was inclined to attribute this reduction either to a temporary industrial depression in New England or to the discharge into the Merrimack River of some new, virulent, and powerful industrial waste which killed some of the intestinal organisms (Joint Sum. p. 280; Transcript, p. 2059). Mr. Eddy stated (Transcript, p. 2050) that he felt "very certain that the quantity of industrial wastes in the Merrimack River, where there is a large, abundant supply of water for industrial purposes, will increase in the future," and that he believed that they would at least double in forty years. Clearly, the Special Master was none too harsh in his description of the Merrimack River (following the testimony of Mr. Dooley, Joint Sum. p. 231; Transcript, p. 1661) as a "public sewer," with a doubtful future.

Exception No. 60 (Conn. Exc. p. 28) excepts to the failure of the Special Master to find that the water now furnished to the Metropolitan District about Boston should be treated. Although the exception seems immaterial, since it contains unfair allegations and innuendos, it must be mentioned briefly that it was the universal testimony of the witnesses that the present Boston water supply is an entirely satisfactory supply as to quality, safety, and management (see, *e.g.*, Joint Sum. pp. 270, 286; Transcript, pp. 2002-2003, 2090-2093). Boston has a very low typhoid record, according to the testimony of a witness called by Connecticut (Joint Sum. p. 205; Transcript, pp. 1148-1149). It is true that several witnesses stated that, purely as an extra precaution, they believed

surface-water supplies, including the Boston supply, should be chlorinated, as a guard against chance pollution in the storage and distribution system (Transcript, pp. 1105, 1898, 1982, 2003, 2152-2153). No witness suggested any present need of applying any of the complicated processes of aeration, coagulation, or filtration to the existing Boston supply or to the proposed Ware–Swift supply, all of which processes would have to be applied properly and continuously to make the polluted sources suggested by Connecticut safe (see, *e.g.*, Rep. Sp. M. 46).

The Special Master's General Findings of Fact as to the Superiority of the Ware–Swift Project and the Objections to the Eastern Sources Stand Unassailed by Connecticut.

The Special Master's general finding of fact (Rep. Sp. M. 39, 52) that both the Eastern schemes [the "15 watershed" scheme and the "Merrimack River" scheme] suggested by Connecticut for furnishing Metropolitan Boston with water involve water much inferior to the Ware–Swift water, stands undisputed by any Connecticut exception, as does the finding "that in many ways it is most advantageous to obtain a source of pure supply [*i.e.*, one which does not need complicated purification] wherever reasonably possible." In the face of these broad findings and of the findings (to which no exceptions were taken) as to the detailed objections to both schemes suggested by Connecticut (Rep. Sp. M. 33-52), it would seem conclusively settled that the Ware–Swift project is from every standpoint the best project for supplying Boston with a new supply, and that the only suggested alternatives are inferior, hazardous, and subject to a multitude of objections. It cannot be said, in view of the evidence quoted *verbatim* (Rep. Sp. M. 35-36, 37, 40-44, 47) by the Special

Master, that his findings were not well warranted. This being so, counsel for Massachusetts feel that they should not in this brief [already unavoidably long due to the multiplicity of the Connecticut exceptions] state at length the evidence as to the alleged Eastern supplies. It has been done by them in detail in the brief presented by Massachusetts to the Special Master [on file (bound in a green cover) with the clerk of this Honorable Court (see pp. 93-163)].

It is the contention of Massachusetts that—

(1) inasmuch as the Ware–Swift project will cause no substantial damage to Connecticut,

(2) since it is the safest and purest supply available, as well as being the most desirable from an engineering standpoint,

(3) because all other suggested supplies are hazardous, polluted, and subject to the danger of treatment breakdown, as well as many other objections specified at length in the report of the Special Master—the reasonableness and the necessity of resorting to the Ware–Swift project is established adequately. Confessedly, if the Ware–Swift project was of sufficient magnitude to cause Connecticut a very substantial damage, Massachusetts might perhaps be required to risk the health of its inhabitants by the use of inferior and polluted sources rather than to cause a great injury to a sister State. The doctrine of equality of right and of equitable division [as this Court has decided, notably in *Kansas* v. *Colorado*, 206 U.S. 46, 100 *et seq.*] would require in each instance that the needs of the State seeking to use water should be balanced on broad equitable principles against the possible damage to the State complaining of that use. Where, as in the case at bar, no damage to the complainant State (Connecticut) will be caused and the State seeking to use the water (Massachusetts) has a very real need of that water, the equities run decidedly in favor of Massachusetts.

The waters falling upon a State in the form of rainfall and running in the upland streams of a State are natural resources of great value to the State. Their primary use, as we have attempted to show above (see also Transcript, pp. 998, 1945), is, of course, for domestic water supplies. The fact that these upland waters are tributaries of interstate streams does not make them any less natural resources of the State in which they lie. Certainly the doctrine of equitable division should make a reasonable portion of them available for drinking and domestic use to the upstream State where the rainfall occurs, particularly when the use by the upper State does not substantially change the character or size of the interstate stream in the lower State. A 2% average annual diversion, taken almost entirely in times of high flow, cannot be said to be more than the fair share of the waters as to which Massachusetts can justly claim the right to make a complete appropriation, under the doctrine of equality of right and equitable division laid down by this Court and by international law.

This contention, it is submitted, disposes of Connecticut exceptions, numbered 68 through 74. All of these exceptions raise, in one form or another, the propriety of the action of the Special Master in giving consideration to various objections to the Connecticut suggestions of supplies of water in Eastern Massachusetts alleged to be available in addition to those shown to exist by Massachusetts witnesses. The decisions of this Court discussed above (see this Brief, part III) clearly lay down the proposition that, in deciding how waters shall be divided equitably as between sovereign States, considerations of comparative damage and necessity of every kind will be treated as worthy of investigation. It was, therefore, within the province of the Special Master, acting for this Court, to give such weight as seemed proper to him to the weaknesses and hazards of modern methods of water treatment

(see Rep. Sp. M. 40, 45-47); to consider how far increasing populations upon particular watersheds, rendering it impractical to use the waters found in these drainage areas even by filtration, will make abandonment of supplies imperative (Rep. Sp. M. 3, 37, 38, 39, 43, 45, 50); to consider how far the reasonable needs for water for industrial purposes made it necessary to maintain a minimum stream flow in Eastern Massachusetts streams (Rep. Sp. M. 37-38); to examine the history of water-supply investigation in Massachusetts and determine what weight should be given to the legislative rejection of the polluted Merrimack in favor of the pure Ware and Swift Rivers (Rep. Sp. M. 29-30, 50-51). The Special Master gave none of these elements controlling force [as suggested in Connecticut's exception numbered 73, p. 34], but regarded all of them as worthy of careful investigation.

Connecticut exception numbered 69 seems to be founded on a careless examination or misapprehension of the Special Master's Report. The possibility and necessity of abandoning existing supplies because of inevitable increases of pollution was considered by him (Rep. Sp. M. 38-39, 41, 43-44). The insinuations of fact in exception numbered 68 are equally unfounded. The Special Master did give careful attention to modern water-treatment methods and the weaknesses of those methods (Rep. Sp. M. 40-47).

The Exceptions as to Burden of Proof.

Several Connecticut exceptions were rested upon the contention that technically the burden was upon Massachusetts to prove that the taking of water from sources outside Northeastern Massachusetts was in fact necessary (see Connecticut exceptions numbered 61, 62, 63, 64, 65, 67, 70, pp. 28-33). Massachusetts (1) has shown by convincing evidence what sources of suitable water were available in Eastern Massachusetts (Rep. Sp. M. 31); (2) has

proved that these sources will be inadequate to meet the reasonable and expected demands of the region, in the near future; and (3) to meet the expected deficit, has adopted the Ware-Swift project for obtaining water from pure and uncontaminated sources—a project which will cause Connecticut no substantial damage. This proof establishes at least a *prima facie* case of necessity, as the Special Master found (Rep. Sp. M. 30). Connecticut has sought to prove that two other sources (in addition to those testified to by witnesses called by Massachusetts) were available (see Rep. Sp. M. 32). The Special Master has found that Connecticut has not overcome the Massachusetts evidence as to the many objections to these two sources (the *Fifteen Watershed Scheme* and the *Merrimack River Scheme*), objections which did exist, according to his careful findings [summarized above in this brief]. It should be remembered that no exceptions were taken to his findings of fact as to these objections. Massachusetts has thus sustained a burden of proof which probably technically was not upon her under the pleadings. Massachusetts pleaded (Reprint of Answer, pp. 30-31) that "unless a *suitable* supply of drinking water . . . is obtained by the City of Boston and the metropolitan area about said city, the inhabitants . . . will be subjected to great risks and menace from disease and epidemic, because of the lack of a *suitable* supply of *pure and unpolluted* drinking water, which can be obtained from no source within the Commonwealth [of Massachusetts] except from the watershed of the Connecticut River, as has been authorized in said legislation . . ." [*i.e.*, Mass. St. 1926, c. 375; Mass. St. 1927, c. 321; Reprint of Answer, pp. 36-80]. It is submitted that Massachusetts has made thorough and adequate proof of this proposition, for it has shown that the pure Eastern sources are insufficient and that all other Eastern Massachusetts waters are subject to grave hazards and to serious objections from the standpoint of sufficiency and quality.

Connecticut, in its reply, alleged affirmatively "that there now exists in the Eastern part of the Commonwealth of Massachusetts a full and adequate supply of water susceptible of use for a domestic supply for the Metropolitan District. . . ." The evidence offered in support of this contention made no attempt to show that any sources existed in Northeastern Massachusetts other than—

(1) Those testified to by witnesses called by Massachusetts (see Rep. Sp. M. 31; see *supra,* p. 137).

(2) Those included in the two objectionable and inadequate schemes put forward by Connecticut (see Rep. Sp. M. 32; see *supra,* pp. 139-140; see also footnote, pp. 137-138).

Summary of Water Supply and Demand Testimony.

The parties have agreed that the Massachusetts witnesses testified that the available sources in Northeastern Massachusetts are 343 million gallons a day *today* [of which 85 million gallons a day are not developed, leaving 258 million gallons a day presently and immediately available (Joint Sum. pp. 159, 160; see *supra,* p. 138)]. There is thus at present 258 million gallons a day developed and available to meet a present consumption demand of 244 million gallons a day. The parties have also agreed that the witnesses called by Massachusetts testified that in 1970 the resources available in Northeastern Massachusetts will have fallen to 289 million gallons a day to meet a consumption demand of 467 million gallons a day. In tabular form this evidence of witnesses called by Massachusetts shows:

Northeastern Massachusetts		1929	1970
Water resources			
presently developed	258		
presently undeveloped	85		
Total		343	289
Agreed water consumption demand		244	467

According to the evidence presented by Massachusetts, Northeastern Massachusetts will thus in 1970 face a deficit of 178 million gallons a day, without taking into account any yield from the Ware–Swift project.

The parties further agreed that the table appearing on page 160 of the Joint Summary shows the amount in million gallons a day which Connecticut witnesses testified and claimed was now available "in addition to the supplies now *developed* by Massachusetts" [italics ours]. These additional supplies, totaling 379 million gallons a day, were entirely comprised within the so-called *Fifteen Watershed* plan and *Merrimack River* plan. The additional supplies included 85 million gallons a day from sources (included within the Fifteen Watershed plan) which, as has been said above, witnesses called by Massachusetts said were available to Northeastern Massachusetts but were *not yet developed*. In tabular form these additional sources were:

	Million Gallons a Day
Fifteen Watershed Plan:	
Undeveloped sources said to be available by witnesses called by Massachusetts	85
Other sources in Fifteen Watershed Plan (said by witnesses called by Massachusetts not to be available)	94
Fifteen Watershed Total	179
Merrimack River Scheme:	
(Yield estimated by Connecticut witnesses)	200
	379

The affirmative proof by Massachusetts as to the objectionable nature of the above mentioned 94 million gallons a day, said by Connecticut witnesses to be available from the Fifteen Watershed scheme, and of the 200 million gallons a day alleged to be available from the Merrimack

River scheme, taken together with (1) the implicit agreement of both States that the two tables set out all possible sources of supplies in Northeastern Massachusetts and (2) Connecticut's failure to prove that the additional sources were sufficiently suitable to require Massachusetts to use them, fully warranted the Special Master's finding on this branch of the case. Massachusetts not only established a *prima facie* case, but substantiated that case by affirmative evidence which the Special Master believed. The proof of Connecticut, giving it "the utmost weight, no more than raises a doubt" in the mind of the Special Master (Rep. Sp. M. 51). Exceptions numbered 61-65, 67, and 70 should be overruled.

The Fundamental Consideration.

It should be remembered, however, that, in the case at bar, it has been found that the Massachusetts project will cause no substantial injury to Connecticut. That fact renders every other element of the case irrelevant and in itself should be enough to cause this Court to deny any relief in equity to Connecticut [under the principle of cases like *North Dakota* v. *Minnesota*, 263 U.S. 365, 374; see Rep. Sp. M. 7, 28-29].

Conclusion.

Massachusetts, therefore, contends that the Special Master's recommendation for a decree should be adopted, and that the bill of complaint should be dismissed without prejudice to Connecticut's right to apply for relief in the event that Massachusetts fails to comply with any orders and rulings of the War Department while they may be in force, or in the event that the terms of the present legislation or War Department findings are changed so as to authorize a further diversion. Massachusetts interposes no objection to the insertion in the decree of a condition requiring Massachusetts to pay $80,000 to the owner of the King's Island

power as soon as a 50,000 horse-power redevelopment is actually constructed at that place; such payment to be a payment on account for any damage which the owner of that redevelopment may seek to prove because of the Massachusetts project.

It is submitted that the following propositions, among others, have been proved:

1. The Special Master was correct in finding that the execution of the Massachusetts project will cause no material injury to Connecticut. In view of this finding, Connecticut is entitled to no relief in equity.

2. The Secretary of War has made valid and conclusive findings that the project will not interfere with navigation and by his action has protected all interests of navigation.

3. Massachusetts is not appropriating more than its fair share of the waters of the Connecticut River Valley. The project is proper under the principle of equality of right and equitable division.

4. The Special Master was entirely correct in finding that Metropolitan Boston ought not to be compelled to resort to inferior, dangerous, and polluted waters, inasmuch as much better pure waters are available without causing damage to Connecticut and without any inequitably large appropriation of waters from the headwaters of an interstate stream.

Respectfully submitted,

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